Exploring the disharmony between the temporary and permanent organising forms in a parastatal

by

Cornelis J Botha

A thesis presented in fulfilment of the requirements for the

Degree of Doctor of Philosophy in Business Administration

GRADUATE SCHOOL OF BUSINESS

FACULTY OF COMMERCE

UNIVERSITY OF CAPE TOWN

June 2023

Supervisors: Associate Professor Sean Gossel, Dr Dirk Krüger

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Declaration

I, Cornelis J Botha, hereby declare that

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is my own work both in concept and execution and all sources have been acknowledged through referencing

CJ Botha

Acknowledgements

University of Cape Town, Graduate School of Business

Associate Professor Sean Gossel

Dr Dirk Kruger

My fellow professionals in the industry

My family, friends and colleagues

Dedicated to Dr Larysa Botha, my inspiration

Abstract

The primary focus of this research is to explore the disharmony between the temporary and permanent organisation forms where integration is required to further business objectives. Organisational dynamics and cultures are included as significant factors in the study. The researcher posits that disharmony, or tension, exits between these two organisation forms, specifically, the project management fraternity and the fraternity of the permanent organisation. From this disharmony arises a dichotomous paradox that incumbers the seamless coexistence between the two organisation forms.

This study, therefore, investigates the institutionalisation of the management of temporary organising through an understanding of the level of an organisation's execution of projects and proposes a construct aimed at addressing the phenomenon of dynamic imbalance to the appropriate level. It set out to:

- gain an understanding that enlightens the suspected dynamic imbalance,
- explore the extent to which the research problem exists,
- gain an understanding of the dynamics of assimilation between temporary and permanent organising,
- explore the harmonies that could enrich closer collaboration between temporary and permanent organising,
- given the acquired result, to analyse deficiencies, and construct a theoretical framework that constitutes the end state.

A literature review explored challenges in project execution and the relationship with project management maturity. A Qualitative Ethnographic study was conducted within the temporary and permanent organising communities to explore the posit and to develop appropriate solution proposals. As informed by the literature review, and per Actor-Network Theory, this relationality within and between the actants within the two organisation types was investigated. Actor-Network Theory was used as the theoretical lens to explore what changes could be instituted to enhance goal achievement of both the permanent and the temporary structures by investigating material-semiotic relationships in a network context.

From the information gained in the literature review and personal experience included in the study, an appreciation emerged from where the disharmony and the contributing factors were better understood. The insight gained from the research provided the setting for the development of a framework to be used during the co-existence of the temporary and permanent structures. This framework could mitigate the effects of the dynamic imbalances as experienced under the status quo.

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Chapter 1 Introduction and outline of the research

1.1 Structure of the research

The theoretical construct of the study structure that follows outlines the research project and is presented in seven chapters.

Chapter 1 Introduction and outline of the thesis

The thesis establishes an orientation for the reader, commencing with the background and rationale for the study. Salient literature is discussed to provide context. This is followed by the research problem and focus to guide the reader towards the significance and contributions of the study. The research setting is then presented, providing the locus of the culture under study, followed briefly by how the study is delineated and limited. The research methods are momentarily discussed to provide further context, followed by ethical matters.

Chapter 2 Discussion of literature and key concepts

This chapter presents the theoretical discussion of project management and its application, the project manager and hindrances, and the dilemma of temporary organising. This includes some of the researcher's personal experiences in developing project management towards improving the temporary organisation. The permanent and temporary organising forms are discussed with the project management environment and projects as the organisational change initiative. The element of the dynamic imbalance is included and discussed as the research problem, and the unanswered questions are presented. Extant literature is discussed where the observed phenomena and the element of the dynamic imbalances are relevant and persistent in the industry.

Chapter 3 Theoretical consideration

In this chapter, a discussion is conducted concerning the theoretical underpinnings of the study and the interpretive context of the research problem. It is argued that the observed phenomenon and its subsequent contributing

element of organisational disharmony can be better understood from the critical tenet of Actor-Network (Callon, 1986; Latour, 1987). In viewing the observed Phenomenon form an ANT perspective, it is argued that:

> "…the eccentricity of the management of projects aligns with complex networked ecologies, comprising a sociotechnical network of human and non-human actants with agency and influence, which is continually changing."

Chapter 4 Research design

A formalised statement of the observed phenomenon gave rise to the research design and justification for the approach. This influenced presenting the theories underpinning the research approach towards informing on the phenomenon and the interpretive theoretical lens. The writings of,, Wolcott (1999), Latour (2007), Given (2008), Bhaskar (2008), Law (2009), Sayer (2010), Saunders, Lewis, & Thornhill (2012), Creswell (2013), Creswell (2014) and Gobo & Molle (2017) guided the approach and methodology for this research design. As discussed further, the ontological and epistemological stance informed the decision to inquire through an ethnographic strategy and the interpretive worldview.

Chapter 5 Presentation of results – the manifestation of disharmony

The presentation and analysis discuss the researcher's observations in the research setting and summaries of the cultures therein. Each of the instances presented reflects the researcher's experiences as a professional practitioner and the results of discussions with colleagues and participants in the profession.

Chapter 6 A conceptual framework towards homogeneity

Chapter 6 discusses an interpretation of the phenomenon through actor network theory perspective and specifically the sociology of translation as a keystone as the theoretical lens and presents a conceptual framework towards improved understanding of the relational contract between the two organising forms.

Chapter 7 Conclusions and recommendations

This chapter presents the summary, results, and provides recommendations. It will also present the final conceptual framework that the research produced. Having given the reader a synopsis and overview of the research report, a discussion of the relevant topics pertaining to the phenomenon observed will be conducted.

In terms of presentation of the research the research is typified as exploratory in nature and is presented as an ethnographic report and therefore rich contextual discussions, augmented with explanatory diagrams and illustrations are utilised. The use of the literature and ethnography with its reflexive nature enabled the researcher to recount historical observations indicate that the phenomenon is persistent and to a large extent, exists for many years.

1.2 Background to the research

The researcher is a practitioner in business and project management with a career spanning 40 years and has experienced that undesirable and unpredicted outcomes regularly plague the execution of temporary and time-bound initiatives. More recently, the researcher was employed in South Africa's largest parastatal electricity utility and, specifically, as the Head of the Project Management Office Centre of Excellence in its largest subsidiary. The utility was selected as the setting for this research. In addition to being a recognised project management subject matter expert, the researcher's role in the utility includes; being a recognised project management subject matter expert within the utility's academy of learning, tasked with the project management standardisation initiative in the subsidiary, participating in the development of the project management standardisation initiative within the utility, chairmanship of the utility's project management learning committee, facilitation of the project management subject matter expert forum, facilitation of the utility's project management research forum, and facilitation of project management learning in the employee groups. This includes regular membership of the subsidiary's management committee, permanent membership of the management operations committee, chair of the procurement tender committee and membership of various project steering

committees in the subsidiary. This study has relevance, happens with sanction within the utility in South Africa, and should have a broader application.

1.3 Rationale to the research

The rationale for the research is found in the challenges experienced in organisations during temporariness in executing projects towards organisational change.

Organisations who desire virtually any form of organisational change; from an investment perspective, systems improvement, structural change and the like, direct the project management 'profession' to manage the temporary event. The literature and reputable auditing institutions such as KPMG and Standish Chaos (KPMG, 2017; Standish Group, 2020; De Bruyne, Moens, & Vanhoucke, 2021) report that it is expected that projects are challenged at various stages during execution and occasionally fail to deliver on stakeholder expectations. The literature proposes various causes for these challenges during the execution of the projects.

Whilst projects are being executed, a temporary organisation form emerges within the permanent organisation (Lundin & Söderholm, 1995) and at the completion of the project, the temporary organisation form ceases to exist. The literature concurs that the temporality is known (Sydow & Windeler, 2020), and that through the temporary structure value needs to be created as and how directed by the permanent structure (Riis, Hellström, & Wikström, 2019). It follows that a strong connection needs to be established between the two forms of organising (Riis, Hellström, & Wikström, 2019). To function seamlessly in collaboration, these two must maintain a practical and durable relational contract (Stjerne & Svejenova, 2016) whilst the temporary event is in progress. Winch (2014) argues that the temporariness needs to be better understood, and that theories of temporary organisations (Sydow & Windeler, 2020) to supplement traditional project management wisdom are thus required. Söderlund (2004) suggests that the understanding of the relationships between projects (temporary) and their environments (permanent) needs to be further researched.

1.4 Research problem

From the findings through the KPMG (2017) reports, as well as the Standish (2020) reports, it is suggested that whilst projects remain challenged during execution, projects may not always add the intended value but can consume value following poor investment undertakings, execution failure, inadequate progress and changing external conditions.

The observed phenomenon for this research is founded on the posit of organisational misalignment in the structures and the execution mechanisms during temporary undertakings, and is stated as:

"There is a dynamic imbalance, or disharmonious tension, between the temporary and permanent organisations during project execution." This observed phenomenon forms the basis of the research problem.

Kotter (2014) introduces a dual operating system that establishes networks in the modern organisation that is anticipated to enable agility towards rapid outcomes during change. The author describes a dual operating system comprising 5 systems, being;

- The successful implementation of change requires a diverse group of individuals with unique perspectives and strong relationships, utilizing established processes to mitigate potential risks such as conflict, duplication, and waste.
- Individuals are more likely to act as catalysts for change when granted autonomy and permission to do so, as well as feeling privileged to be involved in a significant undertaking.
- Effective change requires a balance of rational and emotional appeal, tapping into individuals' fundamental desires to contribute to a larger purpose.
- In times of turbulence, leadership rather than management is essential for success, necessitating vision, agility, innovation, passion, and celebration.

- An optimal approach for promoting change involves fostering a dynamic partnership between the hierarchy and the network, with a seamless exchange of information and activity, and a comprehensive strategy for education, role modelling, and the cultivation of success to permeate organisational culture.

Despite the anticipated cohesion during the emergence of the systems duality, Sydow and Braun (2018, p. 5) submit that “Even though not every single project is interorganizational, an increasingly important aspect of most projects is certainly their embeddedness in interorganizational settings.” The authors argue that, regardless of the anticipated parallelism, the temporary and permanent organisation forms often appear polarised instead of being integrated towards a common goal, and that tensions exist (Sydow & Windeler, 2020) between the two organisation forms. This dichotomous existence tends to cause stress in the organisation, and that, in turn, stresses the project's progress and success, often to the detriment of the business (Bakker, DeFillippi, Schwab, & Sydow, 2016). Packendorff (1994) suggests that:

- There is a temporariness in the permanent organisation when projects are undertaken.
- There is a dilemma of resource separation.
- There is a dichotomy of management paradigms and processes.
- There is suspicion between the management and managers due to differing perspectives.
- There is a suspicion of organisational weakness and lack of symbiosis.
- Some inefficiencies exist amongst the actors of the temporary and permanent organisations.
- There are failures in the delivery to meet organisational change requirements.

The literature suggests that temporal vis-a-vis permanent disharmony is persistent (Hornstein, 2015; Gemünden, 2017) and, to a large extent, exists for many years Within the academic framework of project management, it is posited

that project execution is challenged for reasons beyond the apparent failure of project teams, including the executing organisation's failure holistically, reaching into the general business operations and support mechanisms.

The contradictory nature of the two organisation forms leads to a dynamic imbalance where the seamless operation of the business is disrupted.

The introduction of the term ‘dynamic imbalance’ is not to reflect extensively on its regular application in the physical sciences but rather to attend to the circumstance that disruptions to stable states may have significant effects. This concept is ideally located in this research project, where the researcher explores the organisation's stability holistically during project execution or, more appropriately then, when temporary organising occurs. The term ‘dynamic balance’ is popular in the technology literature, relating to the state of equilibrium where one force cancels the effects of another. Consequently, ‘dynamic imbalance occurs when that state of equilibrium is disrupted due to other and external influences (Kwon, Park, Jefferson, & Kim, 2013; Alcorn, Allard, & Schaub, 2018).

The observed phenomenon is thus this dynamic imbalance, or disharmonious tension, between the temporary and permanent organisations that form the basis of this study. This research further explores the antecedents to those tensions in the interactions of these two organisation forms. This relationship between the permanent and temporary organisations forms is investigated.

1.5 Research focus and research questions

The permanent organisation is consistent and predictable, and the temporary organisation is intangible and volatile. It is posited that the temporary organisation intrudes on the continuum of the permanent organisation by demanding unpredictable and unfamiliar behaviour temporarily.

Organisations often appear to solve project complexities by relying on the competencies of individuals that comprise the project manager and the team

(Loufrani-Fedida & Missonier, 2014), instead of adopting a holistic organisational approach to implementing the change initiative. From the observed phenomena and emerging from the discourses in the literature, it is considered that organisations are insufficiently mature to manage the temporary and permanent organisation forms contemporaneously effectively. The literature confirms that projects remain challenged, and thus rather than creating value, projects are often consuming value due to the failure rates. Businesses undertaking unique or temporary initiatives are often disillusioned with the result, the progress is questioned, and the value is doubted. Many organisations undertake these initiatives as a leap of faith with the optimism of success, only to reveal later that such optimism was unduly biased towards success (Prater, Kirytopoulos, & Ma, 2017).

The researcher holds the posit that; *'There exists disharmony between the permanent and temporary organisations, where the symbiosis of subservience is interrupted, potentially threatening the sustainability of the permanent organisation.'*

The key focus of this study is to explore the extent of mutual subservience between the permanent and temporary organisation types in relation to the project management environment. The study aims to develop a conceptual framework that will explain and deepen the understanding of the tensions and what causes disharmony to impact the efficiency rate in project execution. Project management is explored in situ, towards an understanding that enlightens the suspected disharmony. This enlightenment is anticipated to contribute towards improving the enabling management environment for effective centre-led organisational competency in the execution of projects and enhancement in the symbiosis of the temporary organisational functionality with that of the permanent organisation.

The objective of the study is *first* to explore the extent to which the research problem exists, *secondly* to gain an understanding of the dynamics of assimilation between temporary and permanent organising and *thirdly*, to explore the environmental conditions which lead to the harmonious coexistence of the two

organisation forms, that could enrich closer collaboration between temporary and permanent organising. Following the position that disharmony exists, this research sets out to explore the following key questions;

Research question 1:	*What organisational mechanisms enable harmony between temporary and permanent organising?*
Research question 2:	*How do vital stakeholders perceive these mechanisms as enabling or disabling harmony?*
Research question 3	*What mechanisms are likely to enable harmony to encourage a coalition of temporary and permanent organising?*

It is submitted that this concept of disharmony is ideally located in this research project, where the organisation's stability during project execution is explored holistically when temporary organising happens.

1.6 Significance of the study

The significance of the study is that contributions are made to the levels of theory and practice and in the complex environment where projects are executed. *In theory*, the scientific knowledge relating to temporary and permanent organising and the associated cultures within the same environment could be broadly enriched. *In practice*, transparency in the weaknesses of the ecosystem of the business management types could be enlightened. *In policy*, by addressing the purpose and value of coexistence between temporary and permanent organising could contribute to business strategy and improved cooperation of the two organisational forms.

1.7 Research setting

Project management has been practised in South Africa’s largest energy utility for many years, commencing in the previous new build programmes of the 1970s

to the 1990s. This culture of management by projects is deeply rooted in the utility, and the enterprise project management office, project management office and project offices are being standardised throughout the organisation at all levels and through to the subsidiaries. Formalised project management in the utility comprises various project lifecycle models, process control modules and working methods.

The utility has recently undertaken its first build programme in twenty years, setting out to execute mega projects to continue the previous big build programme that terminated during the early 1990s. Large fossil fuel generation systems projects were initiated following the pressure to expand capacity when realisation set in that the national grid was severely constrained during an unplanned outage incident that occurred in 2007. The urgency to execute new capital projects brought about the dual organisation (Kotter, 2014) of the projectised versus operating intra-organisational resource structures. The utility further acquired international support and strategic partnerships with expert organisations to execute these new build projects. It is common knowledge however that the projects' cost and time estimation in the new build programme is appreciably inaccurate (Dentons South Africa, 2018). It is anticipated that the project execution is plagued by organisational predicament, and it is suspected that the production organisation inadequately services the projects.

This study focuses on the dynamics of intra-organisational interactions, relationships, and activities, as opposed to those taking place between multiple organizations, which are referred to as inter-organisational relationships.

The literature confirms that the challenges toward successful project execution are common. Considering the magnitude of the utility within the South African context, it is suggested that the research setting is a valid representation of the greater society of practice within the subject under study. The participants are highly experienced and considered to be suitably knowledgeable.

Before undertaking this study in the current research setting, the relevant study committee was approached, approval was gained, and funding for the study was

secured. Ethics clearance letters have been acquired and were utilised to secure participant interviews and observations of the participants. The reasons for selecting the site were guided by the frequency and the order of magnitude of the utility's projects undertaking, influences and impacts in the multidisciplinary environments, and it is a rich contestant in terms of complexity. The continuing electricity crisis and the utility's need to respond thereto in its project initiatives further substantiate the research setting.

During the undertaking, peer debriefers who are experts in this field were regularly engaged.

1.8 Delineations and limitations of the study

Not all variables related to general management and the management of projects were included in the research. The study focussed on the relationships and observed disharmonies between the temporary and permanent organisation forms. Although the dialogue of critical concepts and literature in Chapter 2 discusses various matters surrounding the area under study, it is accepted that other observers and researchers may consider additional deliberations. The literature for the research was limited to full-text articles in peer-reviewed journals and books published by influential authors. The most prevalent and comprehensive databases in the field of business management were searched for and discovered through the University of Cape Town's integrated online library system.

1.9 Ethics

In addition to exploring extant literature on the research problem, the research setting was established as relevant to the research problem. The research strategy is to explore the problem in situ, which requires observations and conversations with human individuals and exploring non-human systems. It was anticipated that these human participants might be apprehensive about divulging genuine emotions or embellishing their responses to exaggerate the culture. Having established organisational support and entrée to the research setting,

ethics clearance letters were acquired and utilised to secure participant interviews. The parties signed confidentiality agreements where the data's context and content is revealed only in the thesis, and the participant is assured of anonymity and exoneration. Per the guidelines of Creswell (2013), respect for the site was demonstrated through minimising disruption, building trust and mutual respect, not deceiving participants, eliminating power imbalances and exploitation of participants, and creating an experience of reciprocity. Data were analysed to avoid bias towards participants, and multiple perspectives, including contradictions, were reported. Data was reported candidly and honestly and published in a way that is not harmful to participants and in understandable language. Each participant was assigned a unique code, against which the interview transcription was allocated. A database was maintained where the data is held in a protected encoded file.

Chapter 2 Key concepts and literature

2.1 Introduction

This chapter discusses key concepts and the literature applicable to the study to provide how the business context within which projects are executed was described and observed by others. In addition to literature reviews on the research problem, the researcher's insights are included with contextual discussions to establish a substantive argument that the disharmony between the temporary and permanent organising forms is persistent. The observation posit that poor performance by the execution teams is exacerbated by an underlying concept of tension in which a project is undertaken through the permanent and temporary organisation forms (Bakker, DeFillippi, Schwab, & Sydow, 2016). Key concepts regarding project management relating to the research problem and as found in relevant literature are reviewed and discussed in this chapter. The literature review intends to find the evidence of the persistent disharmony between the two organisation forms.

Organisations fashion the delivery of their business objectives in a manner that utilises either managing by executing their temporary initiatives through projects or project management in implementing projects for customers (Kerzner, 2004; Paniagua Tufinio, Mooi, Ravestijn, Bakker, & Boorsma, 2013). These temporary initiatives are executed to add value to the organisation (Riis, Hellström, & Wikström, 2019). Competitive market forces influence present-day project initiatives, and whilst success ensures various returns, it is common knowledge that failure in the delivery of projects has vast consequences (Hornstein, 2015).

The project management environment functions within a business context, wherein methodology and structure exist. Traditional business management styles prescribe permanent organisation (Sydow & Braun, 2018).

Globally, it is acknowledged that project management requires continued improvement in its management style, and attempts are made by several authoritative international organisations and institutions who strive to normalise

project management practices (Shepherd & Atkinson, 2011). The role of these organisations ostensibly is to define the scope of the project management discipline, define the areas of expert knowledge for practitioners, and establish criteria for professionalisation. The following discussion is not an exhaustive list or review of standards, competency frameworks, project management systems or maturity models. The purpose is to indicate that international acceptance of the needs of these mechanisms exists towards the standardisation of project management practices. Table 1 lists institutions that regularly publish standards and guides towards the Project Management Body of Knowledge.

Table 1 - Project Management Standards and Guides

Organisation	Publication	
Project Management Institute	Guide to the Project Management Body of Knowledge	(PMBOK, 2017)
International Organisation for Standardisation	Guidance on Project Management	(ISO 21500, 2012)
Association for Project Management	APM Body of Knowledge	(APMBOK, 2012)
Project Management Association of Japan	A Guidebook of Program & Project Management for Enterprise Innovation	(P2M, 2017)

Source: Author

Organisations need to maintain competency frameworks for project management practitioners to augment the body of knowledge towards individual practitioner proficiency (IPMA, 2015). Where the above institutions define the bodies of knowledge, competency frameworks are available from influential institutions per Table 2, available to practitioners for internal organisational or personal self-assessment.

Table 2 - Project Management Competency Frameworks

Organisation	Publication	
International Project Management Association	ICB4 Individual Competence Baseline	(IPMA, 2015)
Project Management Institute	Certified Associate in Project Management (CAPM™) and Project Management Professional (PMP®)	(PMI, 2017)
Global Alliance for the Project Professions	GAPPS Assessment tools	(GAPPS, 2020)

Source: Author

Various organisations offer project management business systems, for implementation in project management practices and the application thereof

during project delivery management. It is noted that these systems often form the foundation in organisations that develop their internal methodologies based on specific systems or combinations thereof, Table 3.

Table 3 - Project Management Systems

Organisation	Project Management System	
TenStep - Global Project Management, Training and Methodology	Ten Step	(Ten Step, 2017)
MPMM - Method 123	MPMM - Method 123	(MPMM, 2016)
PRojects IN Controlled Environments	PRINCE2	(PRINCE2, 2014)
HERMES	HERMES 5.1 Project Management	(HERMES, 2020)

Source: Author

In addition to project management knowledge guides and business methodologies, specialist organisations and authors offer project management maturity improvement tools to better enable project delivery execution in practicing businesses, see Table 4. These are available to organisations towards continued improvement in project delivery.

Table 4 - Project Management Maturity Models

Organisation / Author	Project Management Maturity Model	
Kerzner, H	Using the project management maturity model. Strategic planning for project management	(Kerzner, 2005)
Office of Government Commerce	Portfolio, Programme and Project Management Maturity Model (P3M3)	(OCG, 2008)
AXELOS	PRINCE2® Maturity Model	(AXELOS, 2013)

Source: Author

Loufrani-Fedida & Missonier (2014) argue that organisational proficiency in the delivery of projects cannot rely solely on individual employee practitioner competencies but require integration of organisational elements that support the practitioner (Fernandes, Ward, & Araújo, 2015), and secure measurable and predictable consistency in the outcomes (De Souza & Gomes, 2015). According to Sage, Dainty and Brookes (2014, p. 544) “in project management, failure is often assumed to be evidence of deficient management: a problem that can be overcome by better management”. Sydow & Braun (2018) submit that it is a collaborated business integration where the project as a temporary organisation requires support from the permanent organisation. The concept of maturity as

purported by the various models, endeavour to overcome the divide between individual competence vis a vis organisational capability. It is then often found that the organisational design aspect is artificially inflated in terms of “Maturity measurements”. However, it is noted that the individual project manager ultimately remains individually accountable for project non-performance.

The following key concepts were examined and discussed;

- Project Management as a discipline
- The project manager as key participant at the individual level
- Challenges in project execution
- The Business context as the locale for project execution

2.2 Project management as a discipline

It was established thus far that project management is a relative novice style, having emerged in a rapidly expanding economic paradigm following the Second World War (Kwak Y. H., 2005). Great advances in the practice took place since the early 1980s, and it was observed early on in the researcher’s career that some form of derision exists between the permanent and the temporary forms of organising.

2.2.1 Historical development of project management

The literature appears not to be united as to the precise origins of project management, with one common tendency however, that formalisation or modern project management occurred following the Second World War. Garel (2013) agrees with Söderlund (2004) that project management received little attention in earlier literature. The origin of project management is relatively defined as having initiated from within the engineering and technology arena (Garel, 2013; Kwak, 2005), but today everyone ‘does it’.

Kwak (2005) defines four periods in the history of project management, suggesting that the concept developed from 1900 to 1958.

Table 5 - Four periods of project management

Period	Theme	Sub context
Prior to 1958	Craft system to Human Relations Administration	Project Management Actual Projects
1958 - 1979	Application of Management Science	
1980 - 1994	Production Centre: Human Resources	
1995 to present	Creating a new environment	

Source: (Kwak, 2005)

Kwak broadly terms the early development before 1958: Craft system to human relations Administration. This period was characterised by introducing of technology that effectively reduced project life spans. Production management within the manufacturing industry prompted the invention of the Gantt chart to provide visual intelligence of the production plan and progress reports. Improvements in the work information led to the development of the Work Breakdown Structure.

Kwak's second stage 1958 – 1979, which he generally labels as the 'Application of Management Science' brought exponential technological expansion in defence systems, aerospace and electronics. The advent of the computer age developed several project management software organisations, leading to sophisticated computer-hosted instruments such as PERT/CPM, requiring specialist operators.

Kwak's third stage from 1980 to 1994, 'Production Centre: Human Resources', the IT sector miniaturised the computer technologies from large mainframes to desk and personal office-based hardware. It was now found that the development and maintenance of project schedules were no longer limited to the availability of specialist computer engineers as user-friendly devices were developed, presenting access to project management systems to project team members who could then develop and maintain sophisticated and complex schedules.

Global networking and further miniaturisation of computer technologies in the period following 1995 'Creating a new environment' accelerated the development of project management as a business science. Awareness and utilisation of project management emerged across multiple business sectors enabling highly productive and effective project teams. Since its inception during the post-Second

World War period, project management was practised mainly by the engineering faculties until the early 1980s. The development of project management since its formalisation as management of technology functionality towards a business and organisational enabling functionality has been rapid since the 1980s (Kwak, 2005), and saw the emergence of the programme and portfolio management philosophies.

According to Garel (2013), project management emerged during the 1930s from the production environment. Yet it still is relatively novice as a modern business practice and is discussed later in this research. Technology development pressures in the period following the Second World War and the rapid developments in aeronautics, large technical projects and military expansions, established the formalisation of project management as a method of change implementation during the 1950s (Kwak, 2005). At that time however, the concept mainly focussed on the technical aspects of the project and did not attend to the organisational benefits. The practice has subsequently gained momentum and has become fashionable as the tradition to implement beneficial change, principally from the late 1980s (Garel, 2013). The practice now continues to evolve and modernise ever since (Hope & Moehler, 2014).

2.2.2 Professional Bodies, standards and publications

The Project Management Institute (PMI) was founded in 1969 (PMI, 2017) and is the world's most prominent project management body and the most significant project management fraternity. A Guide to the Project Management Body of Knowledge, officially published in 1996 (Duncan, 1996), is the PMI's formal knowledge standard for project management practitioners. Other and similar bodies were established in the 1960s, and the academic journals are becoming rich in the context of the management of projects. In modern business practice, projects are executed within three tiers in organisations; being the portfolio as the collective to optimise the organisation's resources towards the strategic purpose of the organisation, the programme as the strategic goal objective through clustering projects and the project at the abstract of execution. Most recently, the

International Organisation for Standardisation published the standard: ISO 21500:2012 Guidance on Project Management only in 2012 (International Organisation for Standardisation, 2012). It is notable that the business standards and guidelines for project management practitioners are relatively novel.

From the emergence of these standards, it is evident that project management development has transpired nominally over the past 60 years, however, in congruence with the permanent organisation and levels of authority and execution of strategic, tactical and operational, there is a similar delimitation in projects known as portfolio, programme and project levels. These aspects are highlighted below, including their relation to forming temporary structures and the reciprocal integration back into the permanent organisation.

In Table 6 below the three tiers of project management are defined by three authoritative guardian standards organisations. The definitions are shared between these organisations and are widely accepted in literature.

Table 6 - The three project management tiers

PM Tier	Definition	Roles and Responsibility
Portfolio	"A portfolio refers to projects, programs, sub-portfolios and operations managed as a group to achieve strategic objectives." (PMBOK, 2017, p. Kindle Loc. 910)	"Portfolio management refers to the centralised management of one or more portfolios to achieve strategic objectives." (PMBOK, 2017, p. Kindle Loc. 994)
	"A portfolio is a set of projects and/or programmes, which are not necessarily related, brought together to provide optimum use of the organisation's resources and to achieve the organisation's strategic goals while minimising portfolio risk." (IPMA, 2015, p. 27)	"Portfolio management is a dynamic, decision-making process in which new projects and programmes are evaluated, selected, prioritised and balanced in the context of the existing projects and programmes within the portfolio." (IPMA, 2015, p. 27)
	"A grouping of an organisation's projects and programmes. Portfolios can be managed at an organisational level." (APMBOK, 2012, p. Kindle Loc. 4491)	"The selection, prioritisation and control of an organisation's projects and programmes in line with its strategic objectives and capacity to deliver." (APMBOK, 2012, p. Kindle Loc. 4491)
Programme	"A program is defined as a group of related projects, subprograms and program activities managed in a coordinated way to obtain benefits not available from managing them individually." (PMBOK, 2017, p. Kindle Loc. 910)	"Programme management is the application of knowledge, skills, tools and techniques to a program in order to meet the program requirements and to obtain benefits and control not available by managing projects individually." (PMBOK, 2017, p. Kindle Loc. 994)
	"A programme is set up to achieve a strategic goal. A programme is a temporary organisation of interrelated programme components managed in a coordinated way to enable the implementation of change and the realisation of benefits." (IPMA, 2015, p. 27)	"Programme management is concerned with the application of methods, tools, techniques and competences to a programme. It is performed through processes and includes the integration of the various phases of the programme lifecycle." (IPMA, 2015, p. 158)

PM Tier	Definition	Roles and Responsibility
	"A group of related projects and change management activities to achieve beneficial change." (APMBOK, 2012, p. Kindle Loc. 4491)	"The coordinated management of projects and change management activities to achieve beneficial change." (APMBOK, 2012, p. Kindle Loc. 4491):
Project	"A project is a temporary endeavour undertaken to product, service or result." (PMBOK, 2017, p. Kindle Loc. 910)	"Project Management is the application of knowledge, skills tools and techniques to project activities to meet the project requirements." (PMBOK, 2017, p. Kindle Loc. 910)
	"A project is a unique, temporary, multi-disciplinary and organised endeavour to realise agreed deliverables within predefined requirements and constraints. Project management typically involves personnel from project management associates up to senior project managers." (IPMA, 2015, p. 27)	"Project management is concerned with the application of methods, tools, techniques and competences to a project to achieve goals." (IPMA, 2015, p. 36)
	"A unique transient endeavour undertaken to achieve panned objectives." (APMBOK, 2012, p. Kindle Loc. 4491)	"The application of processes, methods, knowledge skills and experience to achieve the project objectives." (APMBOK, 2012, p. Kindle Loc. 4491)

Source: (PMBOK, 2017; IPMA, 2015; APMBOK, 2012)

The definitions in Table 6 show that the Portfolio Management functionality selects and reports on projects from an executive perspective towards investment initiatives. Accordingly, the programme management functionality executes collections of projects from the tactical perspective, and the project management functionality executes the projects at the individual level (PMI, 2017; IPMA, 2022).

A project management office (or programme management or portfolio management office) is part of a permanent organisation. Its roles are typical to provide support, set standards and guidelines for the managers of the different projects and programmes, collect project management data from the projects, consolidate these and report to some governing body. The office must ensure that the projects align with the organisation's strategy and vision. This is generally performed through business case management.

From the above, it is distinctive that projects are complex undertakings within organisations (PMBOK, 2017; IPMA, 2015; APMBOK, 2012; Packendorff, 1994), and it is suggested that the management thereof requires special attention (Kerzner, 2017; Söderlund, Hobbs, & Ahola, 2014). As a point of departure, it is thus required that the organisation adopts an operational approach towards

structuring its capabilities in a fashion that enables the effective execution of the strategies.

Project management's functionality, and the practice's application, seeks to bring structure to complex work environments (PRINCE2, 2014; Grisham, 2010). Typically, the Project Management Bodies of Knowledge (APMBOK, 2012; PMBOK, 2017; P2M, 2017) cooperatively propose specific knowledge areas and systematic processes to address the management of the project in project delivery (Joslin & Müller, 2015). Based on these bodies of knowledge, many methodologies emerge such as MPMM (2016), TenStep (2017) and others, to apply standards and structure to project management.

It can be concluded from the discussion that projects are in nature temporal and complex. Project management is relatively new in comparison to other managerial sciences. A project can or cannot be part of the permanent organisation, nor can it be separated in totality and thus exist within the temporary organising framework. Project management and project managers have developed their bodies of knowledge methods and methodologies that are similar yet different from mainstream disciplines. The development of project management as a discipline and that the project manager requires different capabilities from those members of the permanent organisation.

2.2.3 Project management as the organisational change initiative

Project management is relatively new in relation to traditional management routines and is still evolving and modernising (Hope & Moehler, 2014). According to Turner, Anbari, and Bredillet (2013) project management was first applied in operations research and management science, but it now contributes to other fields of management, being employed in business strategy, marketing, innovation, change, information, and management of technology (Silvius, 2009). Organisations globally adopt projects as individual temporary initiatives to effectively deliver organisational strategies (Garel, 2013; Hope & Moehler, 2014) and bring about beneficial changes in organisations (Oerlemans & Pretorius, 2014; Görög, 2016; Riis, Hellström, & Wikström, 2019). Söderlund (2004, p. 655)

argues that project management is expanding as a business practice and states, "… the researchers suggest project management to be at the core of understanding the modern firm". More recently, project management research is attending to align the theories with organisational strategy and beneficial change (Serra & Kunc, 2014). This view is emphasised by Paniagua Tufinio, Mooi, Ravestijn, Bakker and Boorsma (2013, p. 103), who propose that organisational value creation is driven by projects and state that "Project management is a discipline that underpins much economic activity across industries".

It is observed that from its origins in military, engineering and space travel, project management has evolved to encompass almost all traditional disciplines and business aspects. Yet, it remains trapped in a linear analytical thinking paradigm, attempting to disentangle complexity through implementing structures, templates, tools and techniques This places operations under strain, as project management adoption increases to become favoured by decision makers to align with the philosophies of sustainable development (Keeble, Topiol, & Berkeley, 2003). Yet there is limited focus on the permanent organisational space from which projects are governed.

The institutionalisation of project management as the organisational preference to implement business strategy and beneficial change is required across industries (Garel, 2013). The literature and organisational practice therefore petition a constant strive for progression towards maturity of the entire organisation's project management functionality (Andersen & Jensen, 2003) in the entire organisation. In response to this, the institutions and associations have been established to, in sync with the industry of practice, introduce the knowledge, standards and methodologies to provide the platform from which organisations and project managers can successfully implement projects.

Governing frameworks for the management of projects exist, in the context of portfolio management and programme management, to align with the organisational strategy to apply projects effectively as change initiatives. The project management institutions (IPMA, 2006; ISO 21500, 2012; PMI, 2017) and researchers collectively concur in their definitions that; portfolios select the

appropriate change initiatives for the business towards its strategic objectives, and programmes manage these initiatives in groups to leverage interdependent synergies and financial benefits (Cooper, Edgett, & Kleinschmidt, 1999; Artto & Dietrich, 2004; Patanakul & Milosevic, 2009; Heising, 2012; Elonen & Artto, 2003; Turner, 1999).

The literature consistently states that regular business and project management practices must rationalized (Winch, 2014). Müller, Pemsel, and Shao (2015, p. 725) argue that “These proven practices constitute stability as underlying or antecedent to the flexibility required for the alignment of internal structures, external environment, and governance structure” for the organisation to be agile in execution, robust in implementation but not rigid in execution. The institutionalisation of project management requires commensurate maturity, where different business systems need to co-exist in harmony and at least at maturity level 3, whether a service is externally acquired or sourced internally. Project management maturity is not explicitly discussed in this study but suffices to briefly indicate the requirement for cross-functional integration.

Following the new millennium, project management maturity became popularised to assess the organisational capability to predictably and repeatedly succeed in delivering projects (Görög, 2016). Project management maturity is commonly defined in the literature as those practices and processes within the organisation which are integrated to a significant level and cascaded throughout with organisational regularity (Kerzner, 2005; Dinsmore, 1999).

It must be cautioned that possessing the capability and being mature in the execution of the capability needs to be extended towards proficiency in execution (Kerzner, 2005). Technology may be procured, processes may be installed as either industry standard or bespoke and knowledgeable resources may be appointed, and all can be misconstrued to represent the capability to execute projects. Despite this however, maturity still remains low and project execution diminishes value, suggesting that another less tangible dimension is required, and the absence thereof stimulates the posited disharmony.

Thus, projects are the vehicles through which change is instituted in organisations, and the project manager becomes disruptive to the business as the change driver. Being a disruptor, tension is inadvertently the result. The natural resistance to change can create acrimony towards him/her and the team from within the permanent organisation and, consequently, organisational tensions.

To mitigate this tension, requires facilitating acceptance of project management activities towards a level of understanding within the permanent organisation. A certain level of maturity (Kerzner, 2005)is towards a mechanism that enables cohesion amongst human and the non-human components of the business (Latour, 2007; Law, 2009), to ensure that the outcome of the project can be integrated as a ‘product’ into the permanent organisation (Riis, Hellström, & Wikström, 2019).

2.2.4 Project management maturity

The researcher experienced that business leaders and permitting authorities within organisations must differentiate the organisation's status at any time through the tactical expansion continuum in terms of proportional competitiveness in relation to the industries amongst which it competes. This often requires adaptations to the strategy where business continuance is a prime objective. Formations of strategic development are required to be agile towards fluidity in operational business practices.

Business structures, governance, techniques, methodologies and methods must coexist concurrently and integrate into culture and routine. It is observed that some organisations implement continued improvement changes where others adopt essential redirection of their business focus, and some others remain apathetic. Regardless, during organisational change, the management often finds themselves having to consider new inventive strategic approaches or remain complacent. In light of these challenges, leaders often misconstrue the association between strategy and culture and are slow to respond.

Projects are complex ecosystems and the theory of constraints (Goldratt Research Labs, 2010) argues that the resilience of its weakest element determines the authenticity of a complex system Through the application of this notion as an essential condition, it is suggested that projected organisations enhance the efficiency of project execution through improvements in project management systems (Kerzner, 2005) and competencies in its resources (De Bruyne, Moens, & Vanhoucke, 2021).

Maturity models suggest that organisational project delivery capabilities are enhanced through experience and feedback during and following the execution of projects. A management understanding of maturity is required (Görög, 2016) in both business and project management to reveal those weaknesses that need to be focussed on towards continually improving organisational processes holistically. Considering that project resources are being temporarily employed, there exists a dilemma in establishing a learning culture in the organisation and reaching higher maturity levels. Just as the resources have learned, they get re-deployed, and there is no time to institutionalise their learning, thus strengthening the disharmony as the project resources are continuously learning, and the permanent counterparts must adapt.

Kerzner (2017) suggests that despite firms using project management principles towards their temporary initiatives, project management as a management style has not been recognised as a core competency for an extended period since its origins. It was argued in Chapter 1 that project management alone, or the individual competency of the project manager, does not ensure success, but it can also lead to repeated mistakes (Kerzner, 2017). Learning, albeit indispensable, cannot be limited to an individual experience alone in contrast to interdependent learning amongst groups, as it promotes a departure from best practice.

Pursuant to these challenges, the project management fraternity responded by presenting maturity in project management as a directive and an evaluation framework to coincide with stakeholder expectations with execution results (Kerzner, 2017). The concept of maturity proposes the seamless coexistence of

appropriate mechanisms and organisational culture. Kerzner submits that excellence in project management coexists with maturity and (2017, p. Kindle loc. 2855) presents the following definitions of the two concepts;

> "Maturity in project management is the implementation of a standard methodology and accompanying processes such that there exists a high likelihood of repeated success."

and

> "Organisations who are excellent in project management are those that create the environment in which there exists a continuous stream of successfully managed projects and where success is measured by what is in the best interest of both the company and the project (i.e., customer)."

Authors such as Kerzner (2017) Görög (2016) argue that maturity achieves excellence where the former is thus obligatory to establish an excellent organisation, and the latter evolves as the maturity improves and measures performance against competition with continued improvement to improve effectiveness. It must be noted that the concept of continuous improvement implies that, through the continuum of the progress of maturity advances, the learning organisation is established.

The following in Table 7 summarises project management maturity measurement and management techniques for inclusivity and confirms mechanisms presented by the project management fraternity in relevance to the maturity context.

Table 7 - Project management maturity models

Level	P3M3 (OCG, 2008)	PRINCE2 (PRINCE2, 2011)	Gartner (Mieritz, Fitzgerald, Gomolski, & Light, 2007)	PMI (Kerzner, Strategic planning for project management using a project management maturity model, 2001)
0	N/A	N/A	Non-existent: Ad-Hoc	N/A
1	Awareness: Recognise project, little structure	Same as P3M3	Initial: Reactive	Common Language
2	Repeatable: Begin standard approaches, no consistency	Inconsistent PRINCE2 utilisation	Developing: Emerging discipline	Common Process

3	Defined: Consistent standards, clear ownership	PRINCE2 is tailored and completely utilised	Defined: Initial integration	Integrated Processes
4	Managed process: Monitor consistency, active interventions	Not addressed	Managed: Increasing efficiency	Benchmarking
5	Optimised: Focus on optimisation, consider future demands	Not addressed	Optimising: Enterprise orientation	Continued improvement

Source: Summarised from sources by the author

Backlund, Chronéer, and Sundqvist performed a literature review to highlight various aspects of maturity models and submitted that “though, despite several PM3s developed during a period of over 20 years, knowledge about how PM3s are applied in organizations is sparse within the PM literature.” (2014, p. 837). Despite the multiplicity of these models, their actual contribution towards organisational improvement remains uncertain. This position coincides with the researcher’s observations and experiences.

Harold Kerzner is one of the internationally recognised authorities on maturity. For relevance to maturity and excellence requirements, it was decided to briefly discuss the Kerzner model originally established in 2001 and which is again reiterated with seminal discussions in his most recent book Project Management: A Systems Approach to Planning, Scheduling, and Controlling (Kerzner, 2017).

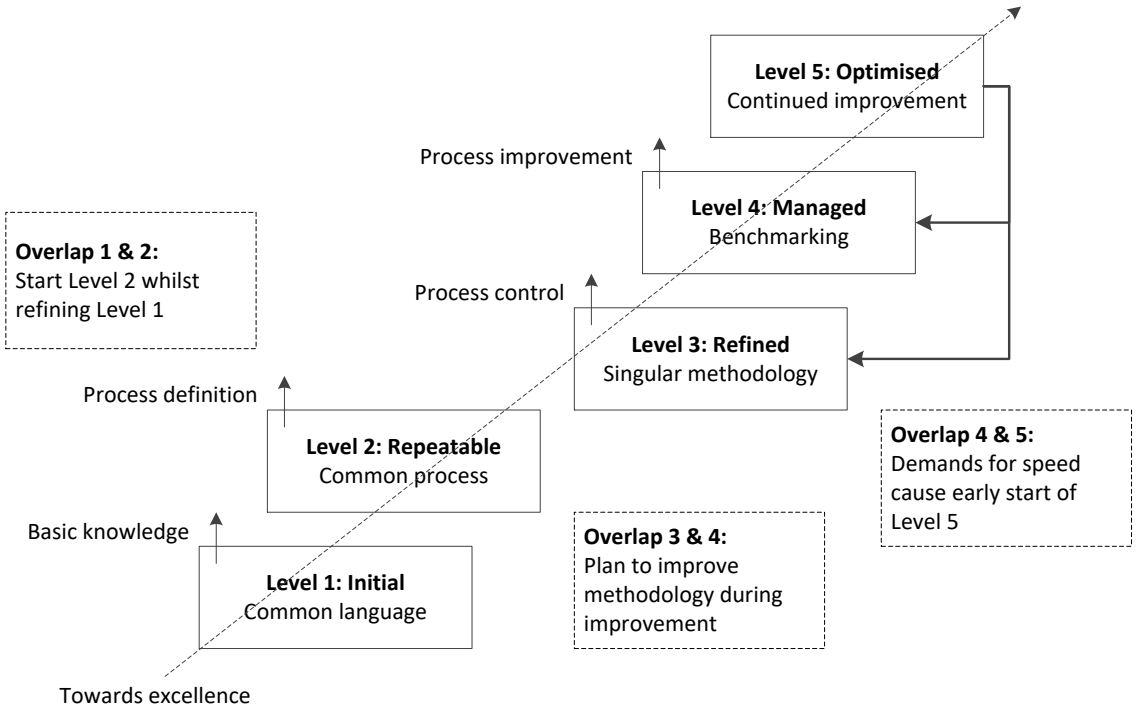

Figure 1 - Kerzner project management maturity model

Source: Derived from Kerzner (2017)

Kerzner (2017, p. Loc. 22419) proposes five levels in the model towards achieving excellence in project management, where each level represents a different degree of maturity, whilst it remains interdependent on the previous or next level in the journey towards excellence.

Level 1 – Common language: Recognising the importance of project management and the need for a good understanding of the basic knowledge on project management, along with the accompanying language/terminology.

Level 2 – Common process: Recognising that standard processes need to be defined and developed such that successes on one project can be repeated on other projects. Also included is the recognition that project management principles can be applied to and support other methodologies employed by the company.

Level 3 – Singular methodology: Recognising the synergistic effect of combining all corporate methodologies into a singular methodology, the centre of which is project management. The synergistic effects also make

process control easier with a single methodology than with multiple methodologies.

Level 4 – Benchmarking: The recognition that process improvement is necessary to maintain a competitive advantage. Benchmarking must be performed continuously. The company must decide whom to benchmark and what to benchmark.

Level 5 – Continued improvement: Evaluate the information obtained through benchmarking and then decide whether or not this information will enhance the singular methodology.

The primary level of common language establishes the required individual knowledge. Whilst progressing to level 1, level 2 may commence where the project management standards systems and methodologies are being developed and implemented. It is required that level 2 is firmly established before commencing with level 3, which is the seamless integration of the project management methodologies with all other organisational methodologies. The standardisation efforts during levels 1 and 2 require that all other organisational sections replicate these efforts within their faculties, and on completion, all business processes are integrated to achieve level 3. It is proposed that level 3 is the penultimate level of maturity with levels 4 and 5 following naturally towards continued improvement.

The project management maturity models commonly share the goal of the optimised projectised organisation. Kerzner (2017) critiques the industry efforts where project management is implemented as part of the organisation's operating intentions, and the complexity thereof has been underrated. This may lead to extended periods towards excellence about competitors and could even lead to the firm never achieving a high maturity level.

Kerzner (2017) further proposes that leaders or change agents within the firm are often inexperienced persons with a limited understanding of project management. These resources often destabilise the business through personal agendas and/or

deny that further knowledge development and organisational learning are vital to understanding the routine of establishing project management as core functionality. Progressing capabilities towards maturity cannot be assumed to follow spontaneously, and the complexity is often underestimated. Several hindrances arise prior to and during the process. Kerzner (2017) classifies seven fallacies in Table 8, contemplating limitations towards successful maturity progression and leading to frustrations within the ranks and unnecessary time expansion.

Table 8 - Seven fallacies that delay project management maturity

Fallacy	Critique
Ultimate goal is to implement project management	Ultimately it is progressive development of process and systems towards continued project success Successful implementation must not disrupt work flow
Establish a mandatory number of forms, templates, guidelines and checklists by a certain time point	Maturity is established by time-based assessment instruments Documents and tools alone do not accelerate maturity Methodologies must be streamlined towards the firm's way of work Integrate lessons learnt and completion feedback with systems to improve best practices
Purchase project management software to accelerate the maturity process	Software systems must be utilised and not owned for sake of presentation only Software systems must be limited to the typical project requirements and free from unnecessary embellishments
Implement project management in small steps with small breakthroughs that anyone can track	Use a large project as the breakthrough point towards buy-in Success on large a project imply similar success on small projects Smooth progress during a large project reduces resistance
Track and broadcast the results of the breakthrough project	Praising a single project highlights only that individual achievement Instead demonstrate the individual project success as a success contribution to the entire organisation
Executive support is required	Continually visible executive support is required Hold regular meetings where executives 'walk the talk' and remain close to the projects and have 'open door' policies
Project management training is required towards professionalisation of practitioners	Professionalisation is only the starting point Project management knowledge development must be adopted as a lifelong education The entire firm must be continually educated in project management at appropriate curricula per role

Source: Adapted from Kerzner (2017)

It is, therefore, evident that project management maturity is required to be an organisation-wide effort and not be extended to the project management team alone. This entails that project management systems must be holistically integrated with all other organisational operating systems.

The KMPG report (2019) results suggest that organisations that implement one or more project management methodologies and presuppose that their maturity is commensurately and inevitably improved are misguided. Kerzner (2017) argues that project management methodologies only partially contribute to project delivery successes, and Joslin and Müller (2015, p. 5) agree that “The literature on PMMs is divided on whether standardised or highly customized PMMs are more effective in supporting project success.”

Kerzner’s project management maturity model (2017) proposes that all organisational capabilities are synergised and then integrated into a singularity at level 3, with project management at the core thereof. The requirement of a seamless coexistence with remaining business functionality suggests that this level is significantly complex, yet as an enterprise undertaking, it contributes collectively to the business value chain. Level 3 is the minimum requirement for congruence between the two organisational forms for meaningful and contributing co-existence and for maintaining the elasticity to be agile in terms of environmental changes and requirements yet robust in acting on such requirements.

Pollack (2007) argues that it is assumed that organisational outcomes are causally connected to management direction with instructions meticulously adhered to and in accordance with the plan. The project execution team is a collection of both temporary and permanent organisation forms and, together with the project manager, must operate continually with upper and functional-level management (Hyvari, 2006).

It is suggested that fracturing occurs in a functional hierarchy within the permanent organisation, and this fracturing is amplified in the temporary organisation as it is inherently inherited from the permanent organisation. In Figure 2, Kerzner (2017), suggests that prestige gaps separate the various organisational management strata and that these inadvertently promote disharmony between functional components. Operational islands thus exist that lead to potential communication malfunctions amongst the project team members, and potential recidivist cultures emerge where team members betray

the project manager and fellow team members in preference of their originating offices. It is prudent that processes must exist to seamlessly bridge these operational departments and resources to function in harmony.

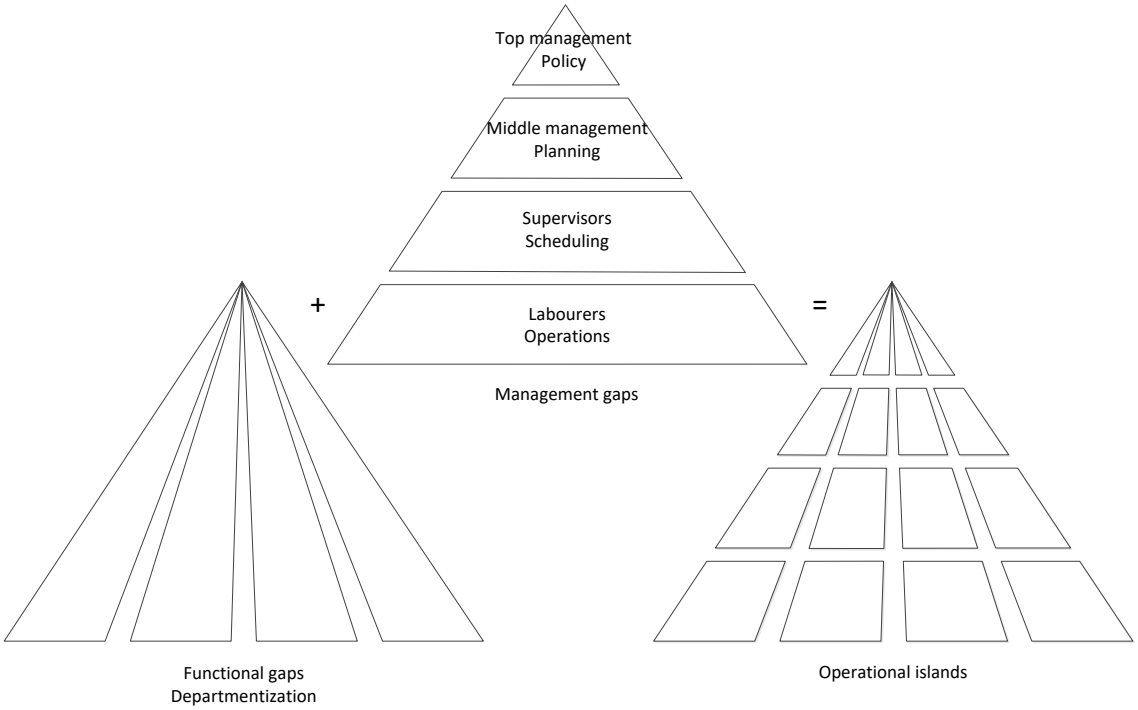

Figure 2 - Organisational gaps

Source: Kerzner (2017)

It is proposed that organisations that are sufficiently mature in their operations present homogenous characteristics, where a more significant impetus is required to bring about changes to the organisation's structures and systems. A fractal quality of pervasive simile to development is required, rather than what is materialised as being fractured. A level of organisational maturity and an environment is required (Andersen & Jensen, 2003), where the management of the temporary initiative is controlled and governed (Hellström, Ruuska, Wikström, & Jåfs, 2013). Thus, conducive to achieving success is the relationship between individuals, the teams and the organisational space and framework created for them to execute tasks proficiently (Lundin & Söderholm, 1995; Nuhn & Wald, 2016; Chigbo, 2013).

The discussion on maturity indicates that fragmentation occurs in hierarchical designs. Pictorially, this fragmentation resembles a matrix. There is a caveat from

this observation that fracturing creates islands and isolation and should not be misconstrued with matrix organisational designs. To alleviate this misconception, the research will explore the traditional organisational designs that are employed in projectised organisations in the section below.

2.2.5 The project management office

Business practice suggests that various designs are available for project execution. This section will investigate the various institutions within projectised organisational designs that are commonly found. Kerzner (2017, p. 101) notes, “The concept of a PMO could very well be the most important project management activity in this decade”.

Further to the above, the results from the KPMG (2019) and Standish Chaos (2015) reports suggest that already at a strategic level, decisions to invest in projects are ill-considered, taking the poor benefits realisation into account. Badewi (2016) reiterates that successful investment decision-making in projects is antecedent to successful execution management of the project. From the above it thus stands to reason that the investment permitting authority in the organisation is highly reliant on the effectiveness of the execution authority and its assets to successfully execute within the permission constraints.

In congruence with the above and with Kerzner (2017) project management, and the effective management of projects, is therefore required to be a core functionality of the organisation. The introduction of the project / programme and portfolio management offices facilitate the institutionalisation of project management (Müller, Pemsel, & Shao, 2015), which is further supported by the adoption of a ready-standard or a bespoke project management methodology, of which several are available. It is argued (Badewi, 2016, p. 762) that projectised organisations seek to improve their value “by increasing the effectiveness of human effort in the organisation while increasing the efficiency of these efforts” and to do so, establish project management structures.

According to Fernandes, Ward, and Araújo (2015) there does not exist a convincing theory that defines the entrenchment of project management practices, and the context is specific to the organisation practices for which it is intended. The institutionalisation of project management thus relies on the organisation's inclination for standard practices and its ability to maintain those.

The Project Management Office can adopt various forms, from a centre of excellence to a project executing authority. As a centre of excellence, the PMO is empowered to improve the project management maturity (APM, 2014) in an unencumbered fashion and prescribe policies and actions to the organisation based on routines adopted by international institutions and practitioners.

Sometimes, a project management office is introduced as a Centre of Excellence. A typical adoption of the Project Management Office in conjunction with the three-tiered management approach is discussed in Figure 3, where the PMO provides a single project governance platform. This proposes a shift in managerial focus as and how maturity is attained, from managerial control at the execution level to governance control at the strategic level. It is noted that the shift in focus is not away from the one to the other, it is rather a situation where focus leads to closer collaboration.

The researcher and his team developed the framework to provide a platform for the firm to ensure the standardisation of project management throughout the organisation. The context in Figure 3 positions the PMO as the custodian of best practices, with the responsibility to continually introduce and maintain mechanisms to empower the execution environment towards consistent and repeatable project successes. Therein exists standardisation through policy structures, where the execution environment comprising the Portfolio (Strategic), Programme (Tactical) and Project (Execution) echelons deliver on the strategic goals. A closed-loop system ensures continuous learning as per the learning organisation characteristics through feedback from lessons learnt.

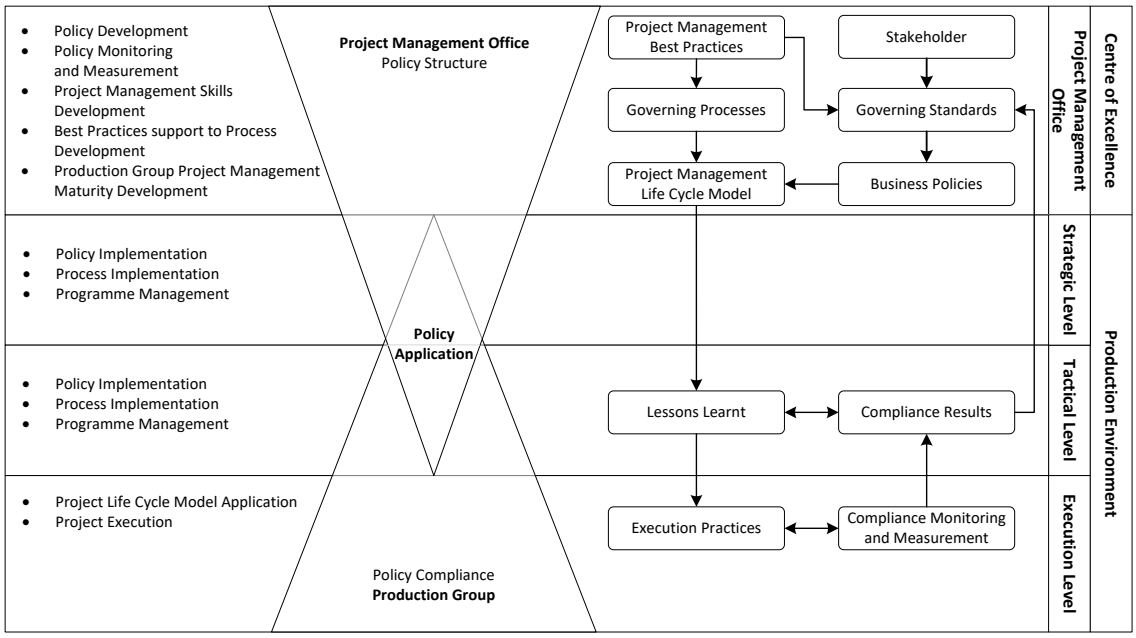

Figure 3 – Typical project organisation

Source: Author

The institutionalisation of project management is progressing, albeit incomplete (Joslin & Müller, 2015). In recent years and commensurate with the modernisation of project management, the emergence of authoritative structures within organisations as the formal project management functionality, subsisting in various levels of complexity and authority, has become evident in practice and in the literature (Winch, 2014). These are; the enterprise project management office as the governance, policy and process custodian. The project management or programme office as the custodian of implementation and conformance to policy and process, and the project office as the actor of execution (Hope & Moehler, 2014). The portfolio, programme and project management environment is the permanent functionality in the context of the project management office structures, and the long-term nature thereof facilitates the temporariness of project management to effectively align with the organisational strategy (Winter, Smith, Morris, & Cicmil, 2006; Hope & Moehler, 2014).

In agreement with Joslin & Müller (2015) and Riis, Hellström, & Wikström (2019) it can be deduced and concluded from this discussion that:

- Organisations are instituting various structures and Offices within the permanent organisation to facilitate and translate project-orientated work to be executed from a platform of permanence.
- Most of these structures have added varying degrees of success to project execution success rates.
- The mere institutionalisation of structures and offices does not guarantee project success.
- There remains resistance towards the permanent and temporary organisations to work effectively to coexist and achieve symbiosis.

2.2.6 The project management life cycle

The international standards organisations propose that projects are executed through a generic lifecycle where the project is initiated, planned, executed and closed out. Monitoring and control mechanisms are prescribed to augment the project manager's ability to successfully manage the project from start to finish (APMBOK, 2012; PRINCE2, 2014; PMBOK, 2017; Kerzner, 2017). Cognisance is taken of governance and managerial control structures and focus. The exposition of governance control and management control function and governance structures such as programme and project management offices are beyond the scope of this study.

Organisations are unique, and many develop the extended project lifecycle model as part of their bespoke project management methodology to various abstractions of intricacy (Joslin & Müller, 2015), often based on international standards such the Project Management Institute (PMBOK, 2017) and International Standards Organisation (ISO 21500, 2012). Other organisations adopt existing international models such as MPMM (MPMM, 2016), TenStep (Ten Step, 2017), PRINCE2 (PRINCE2, 2014) and often adapt these to suit internal management practices.

Table 9 presents a typical bespoke extended lifecycle model for a contractor project management organisation form, seeking to perform work for owner

organisations in response to market enquiries. Such lifecycle modelling is usually propriety for the organisation where it is practised and is seldom observed in the literature. The researcher's PMO team designed this particular bespoke extended life cycle model to standardise the project management activity and provide the project management staff with mechanisms that promote governance and repeatability. Extended life cycle models have been observed to include the entire portfolio management process before initiation, through the post project benefits realisation state, where feedback is provided to the portfolio manager concerning project suitability and future undertakings. This model was developed to broadly adopt the PMBOK and the ISO 21:500.

Associations with the relevant organisational policy and procedures are attached to each capability enforcing validity, as are document templates for the team to ensure standardisation of inscriptions. In Table 9 below, connections to the organisation's transaction management systems are further associated with the capabilities to ensure operational excellence.

Table 9 – Typical extended project management life cycle model

Phases	Stages	Objective	What to do	Governance Management	Capabilities
Pre-Project Planning	Business Planning	Scan market & tender	Search for business opportunities in the market	Prepare & submit Tender Release Approval (TRA) Gate documents	The Methods – 116 Work Packages & Document Templates
	Tendering		Respond to tender, clarify customer requirements & develop tender pack	Prepare & submit Execution Release (ERA) Approval Gate documents	
Initiation	Start Up	Project Office	Develop the Project Office & the project governance framework	Establish Governance	
Planning	Develop the Plan	Project Master Plan	Develop a detailed plan ready for execution		
Execution	Finalise Solution	Execute & Hand Over	Develop each discipline to a detailed level to interface & integrate ready for implementation	Prepare & submit Implementation Release Approval (IRA) Gate documentation	
	Implement		Implement the agreed scope to schedule, budget & safely		

Phases	Stages	Objective	What to do	Governance Management	Capabilities
	Commission & Handover		Handover to Customer	Prepare & submit Handover Approval (HOA) Gate documents	
Finalisation	Close Project	Close Out	Ensure all aspects of the project are completed & signed off	Prepare & submit Finalisation Release Approval (FRA) Gate documents	
Post Project	Realise Benefits	Operate	Assess whether the agreed benefits have been achieved		

Source: Author

During the execution of projects, time constraints require a well-structured framework, and usually, a PLCM is applied to facilitate managerial control and governance control over the project. Such an execution framework assists in standardising execution activities (Packendorff, 1994) and prevents re-inventing the wheel. However, it is observed that execution frameworks often alienate incumbents of positions in the permanent organisation (Joslin & Müller, 2015). It becomes evident that execution frameworks add a layer of intricacy to the project execution team, further complicating the establishment of synergies between the two organisational forms.

It can thus be concluded that execution frameworks are required to achieve maturity in project execution, but it adds to the dissonance in the translation of ‘professional language’ vis a vis incumbency of the temporary and permanent organisations.

2.3 The project manager as a key participant at the individual level

It was observed that, despite sponsors and steering committees, the permanent organisation members tend to get on with business as usual under the supposition that the project manager is “making it happen” (Hornstein, 2015). In stark contrast, the loyalty of the project manager is under stress when the project manager requires support and assistance from the business at large and production demands take immediate preference (Hodgson & Paton, 2016).

It was further observed that when those individuals with regular occupations are allocated to the project manager, they remain accountable in some way or another to their regular key performance areas to deliver those in terms of the key performance indicators metrics. Organisational resources assigned to the project return to their usual occupations within the permanent organisation (Sydow & Braun, 2018; Goetz, Wald, & Freisinger, 2021), or depart from the organisation entirely. It is noted that project management maturity founded on a learning organisation is challenging to achieve and that nuances in execution are established each time a new team is established.

The literature confirms that project management is a core driver towards organisational change and must be a core competency within projectised organisations (Kerzner, 2005; Silvius, 2009; Kerzner, 2017). Fayol (1917) defines the functions of a manager as those of planning, organising, coordinating, controlling and directing, all actions that closely relate to the functions of the project manager (PMBOK, 2017). Fayol further argues that the management functionality should well understand the management of the actions that people require in organisations. Regarding project management, the historical development has shown that the “project” aspect has received attention through the development of templates, tools and techniques and due to the engineering roots. The controlling and permitting authorities require development, which appears to receive limited attention in the project management bodies of knowledge.

It is observed in the literature that the role of the project manager is a fortuitous profession (Richardson, Earnhardt, & Marion, 2015; Savelsbergh, Havermans, & Storm, 2016). Darrell, Baccarini, and Love (2010) argue that many organisations appoint their project resources to be responsible for tasks without adequate experience. It is required that the adequacy of experience should be well founded in both the technical and the managerial aspects of the work that is required to be executed in and through the projects.

It is apparent that regularly, an individual that presents some capability ‘towards getting things done’ in the perception of others is appointed to lead the change,

or an outsourced entity is appointed – virtually based on reputation and in good faith. Richardson, Earnhardt, and Marion (2015) further concluded that the participants in their study were discovered to have limited project management experience and were commissioned instead on technical competencies or general management criteria than on project management fundamentals. In most organisations the appointment in the project manager position is a temporary appointment where the incumbent believes he is appointed as permanent. It is argued that project management is an accidental occupation with a caveat where the incumbents arrive unprepared to fulfil the role of project manager. It is further generally accepted that the project manager gains further knowledge and competencies whilst working as opposed to formal study (Savelsbergh, Havermans, & Storm, 2016).

During the researcher's career and, more recently, over a period spanning 2012 to 2018, project managers were observed as internal and external to the current research setting. Observation of the latter included conducting a research survey in 2012, to measure the extent of common knowledge amongst the project management practitioners within the main subsidiary of the utility. The survey initiative utilised the Kerzner (2005) model to explore maturity in project management. At that time, the utility subsidiary experienced performance issues on its large projects resulting in financial losses. It was anticipated that a deficiency of maturity in project management might contribute to the dilemma.

As part of a previous study, the researcher conducted a survey in 2012 which returned results indicating that common language is limited to below the required standard, that the standard project management processes are inadequate and that those processes that do exist are not integrated with the permanent organisation form's business processes. Of significance, the result returned that the management is absent from project management in that they; do not have project practitioner's development programmes, do not understand project management and do not provide standard execution mechanisms to the practitioners. It has been observed that the situation has not improved significantly within the utility. In technical discussions, there is no marked

improvement in knowledge of fundamentals and exacerbation of the situation, regardless of a methodology being introduced, the ‘buy-in’ remains limited.

The researcher discovered project management ‘by coincidence’ (Richardson, Earnhardt, & Marion, 2015) during employment as a novice engineering technologist in 1980 with a large international organisation that engineered, procured and construction managed the largest coal-to-gas to-petroleum project in South Africa. He was in the office complex of the project engineering and project management team there. These specialists exhibited professionalism and aptitude, which he now terms ‘the architects of success’ to assemble a complex and multidiscipline environment towards a fully functional and profitable business initiative. Personal experience at the time redirected ambitions to develop as a professional engineer to instead seek experience and recognition as a project manager. Enquiries on which formal education could be acquired were disappointed as no formal undergraduate education at Baccalaureus Scientiae (BSc) or Baccalaureus Commercii (BCom) was available at the registered universities in South Africa. Neither was a broad course content at informal institutions that could be explored during the early 1980s. The advice offered to the researcher by those mentors was to seek employment as a project engineer to gain hands-on experience and after that, to seek employment as a project manager.

Kerzner indicated that knowledge of only the fundamentals in project (2005) management is insufficient towards successful execution, and the adoption of systems alone is not adequate either. There is a greater requirement to enable project success in execution from a practitioner’s perspective.

Typically, it is evident that the requirements for a practitioner's proficiency in any occupation rely on the combination of aptitude, prior learning, experience and organisational contribution, see Figure 4.

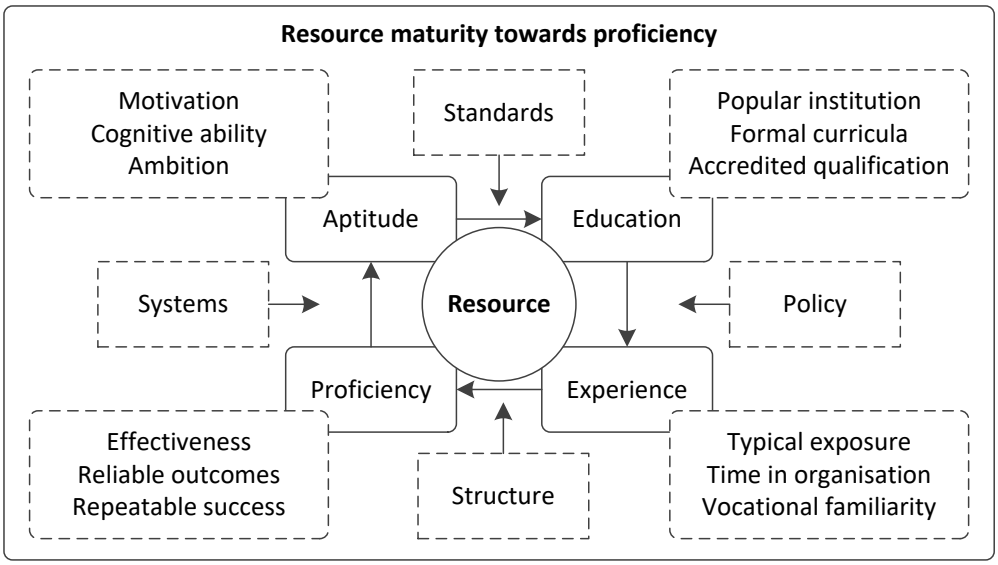

Figure 4 - Maturity in resources

Source: Author

It is traditionally appreciated that resources will, through their inquisitiveness, select a potential career objective to achieve formalised knowledge development, culminating in an accredited education. Organisations profile their requirements in structural or hierarchical roles by defining acceptable qualifications and commensurate experience. Where experience is limited, organisations provide practical opportunities, subject to academic certainty offered by the potential applicant. The collective outcome of the academic offering with practical experience results in a formal registration at a respected institution (PMI, 2017; IPMA, 2022; PMSA, 2017).

Kerner (2005) argues that mature organisations possess policies, organisation structures, practices frameworks and mechanisms for competent individuals to fulfil the organisation's operational activities. Furthermore, improved individual contribution occurs through the relationship between individual proficiency and the renewed aptitude towards continued improvement (De Bruyne, Moens, & Vanhoucke, 2021). From the interdependencies in the states of the three conditional elements of aptitude, education, experiences and subject to the organisational contribution, proficiency in the delivery of desired outcomes is thus achieved. An equilibrium is required within the resource to present an effective value proposition to the organisation. As indicated in Figure 5 an absence of

formalised knowledge development is noted in the major application subject, which requires a significant strengthening in the remaining elements of aptitude and experience.

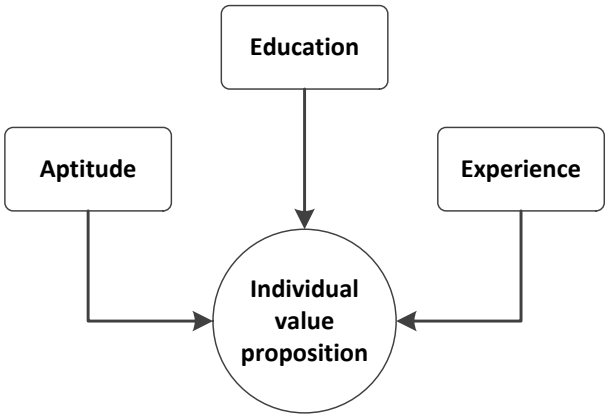

Figure 5 - Individual value proposition

Source: Author

During the researcher's professional experience and occupation as a project manager, it was observed that prospective employers were not, and still are not, in an ideal position to demand specific project management education credentials and, instead, rely significantly on the outcomes of conversations where the subject is discussed in relative detail. An over-emphasis on technical competencies and analytical problem-solving is observed. The dilemma is persistent to the present day, where those as managers and the human resources departments remain in a predicament to prescribe specific project management capability credentials. The latter contrasts with the situation where teams are managed, and the technical contribution thus resides on the level of work execution, not the level of getting contributors to contribute.

This is primarily a result of limited academic prowess in formal educational institutions to recognise the project management educational path into formal qualifications. Physical and internet searches still do not reveal any BSc or BCom degrees in the project management field at formal academic universities. It is noted that Baccalaureus Technologiae (BTech) Project Management is offered in recent times at certain Universities of Technology but not at formal academic universities.

A wide range of project management training courses at various certificate and diploma attendance levels exist at academic and privately-owned academies, ranging from one-day attendance to lengthy periods. Training institutions hesitate to accept the attendance records of competing entities as an entry towards more advanced levels of training. It is speculated that the resistance is driven by financial motivations amongst the competing training facilities and largely, by the lack of standardisation of curricula in project management education.

The BTech Project Management requires an entry equal to a post-secondary school diploma achieved over three years of study. Graduates who have completed BSc with Honoris are hesitant to undertake what is in their opinion and the local SAQA authority a lower qualification in the BTech, even if the latter offers formal graduation in project management at undergraduate and fundamentals level. Instead, many BSc graduates seek further study at the Magister level. At an advanced level, several Academic and Technology Universities offer Magister degrees in project management, which suggests that project management, as a knowledge field, exists at post-graduate education level. Training at this advanced level constitutes strategic drivers and largely omits the first principles and fundamentals offered instead by the non-accredited and non-standardised training programmes at private learning institutions. The profession appears inconclusive on the standardisation of fundamental knowledge specifics towards standardisation globally. It is suggested that the veracity of the various bodies of knowledge and associated competency frameworks is compromised in the absence of such fundamental specifics.

In a recent study by Ramazani and Jergeas (2015) “Project managers and the journey from good to great: The benefits of investment in project management training and education”, the authors conducted a study to explore educational requirements for the development of project managers by formal institutions. The authors concluded that (p. 41) “There is a gap between what education providers are offering and what is needed to deal with projects in today's complex work environment.” The situation is exacerbated where, in those institutions where project management knowledge development is offered, the curriculum is driven

through formal lectures, regardless of the ineffectiveness (Ferraro, 2012; Rynes & Barnutek, 2013). Formal internships in the project management environment are clearly lacking, in contrast to the professional bodies for other occupations. Several voluntary membership institutions offer their accreditation of project management at what they term competent or professional level through the incumbent presenting a body of evidence in academic education and project management-specific experience.

At the legislative level in the South African context, the project manager is not a protected occupation or designation, nor is it registered at a legally enacted council of the occupation, for example, The Health Professions Council of South Africa (HPCSA, 2017), The Engineering Council of South Africa (ECSA, 2017) and other related professional institutions. One exception is the South African Council for Project and Construction Management Professions (SACPCMP, 2017). This statutory council focuses on the built environment and excludes all other project management faculties. In this regard, the SACPCMP does not specify any specific project management training curriculum but does specify graduate-level education in the build environment.

The Project Management Association of South Africa (PMSA, 2017) is a voluntary institution that does offer its own professional accreditation, being the Project Management (PM), Senior Project Manager (SrPM) and Professional Project Manager (PrPM). Similarly, the Project Management Institute of the USA (PMI, 2017), registers the Project Management Professional from a generic perspective. It must be noted that neither the PMI nor the PMSA has legal endorsement by means of public policy in South Arica. The dilemma of the absence of standardised accreditation, variety and non-aligned curricula and non-regulation of the profession leaves the potential employer at the mercy of internal subject matter experts and other advisories to adjudicate and validate the claims of incumbent employees.

Unlike engineers, lawyers, doctors and other registered professions, project management still struggles to be recognised as a reserved occupation (Hodgson & Paton, 2016; Morris, 2014). It is noted that in contrast to other protected

professions, there does not exist a single overarching council established by appropriate public policy that governs project management holistically. In conclusion, it appears that project management is still plagued with not being accepted as a professional occupation. Richardson, Earnhardt, and Marion (2015, p. 1) argue “Professional project managers do not intend to be project managers but fall into the profession”. Therefore, the project manager's future remains problematic as the demand is increasing, and the support structures are inadequate in responding.

2.4 Challenges in Project execution

It is acknowledged that there exists appreciable inquiry and findings in the literature on various factors leading to projects being challenged. This research focuses on the relational contract between the permanent and temporary organising forms as an influencing contributor or detractor towards success and failure.

It is well established in the literature that the early project management mechanisms focussed on decomposing work into manageable tasks and scheduling (Kwak, 2005; Garel, 2013). Goldratt Research Labs (2010) proposed the critical chain scheduling approach in their perspective of the theory of constraints. The project management body of knowledge rapidly expanded since the first PMBOK publication of 1996 and more recently, the publication of ISO 21500 (2012) presenting significant advances in the techniques for the management of projects.

The challenges that projects experience require an improved understanding of other factors that need to be deliberated towards improved execution successes. A review of the literature to this effect shows that Rubin and Seeling (1967) already investigated success and failure in 1967. Belassi and Turkel (1996) argue that since the 1950s, the project management discipline was focused on scheduling procedures with the expectation of providing better management controls and successful outcomes. Whitty (2005) presents that regardless of

ongoing research towards improvements, stakeholders' expectations remain unfulfilled as projects yield disappointing results.

However, many factors within and beyond management's control influence project delivery performance. It is proposed that various elements influence success, independently defined as aspects that surround the project and aspects that relate to the actions of the project team (Sydow & Braun, 2018). Success and failure are interpreted uniquely considering the perspective from which it is experienced (Pinto & Slevin, 1989; Khosravi & Rezvani, 2018). Clients typically interpret projects' success as initiatives delivered within scope, schedule and budget (Belassi & Turkel, 1996; Andersen E. S., 2016). Lim and Mohamed (1999) argue that the same project deemed successful from the client's perspective could have rendered major negative impacts to the contractor in terms of cost and resource utilisation. Inversely then, the contractor may experience the desired financial and reputational gains whilst the expected value is not added to the customer's business that is burdened with a fruitless and wasteful investment.

Hastie & Wojewoda, (2015) argue that despite efforts towards improvement in successful outcomes, project outcomes remain challenged and do not deliver on investor expectations. The Standish Chaos report has been published annually since 1994 and records surveys on project success in the software industry. From 2011 through 2015, the trends in project success, challenges and failures remain relatively stagnant and showed no significant improvement or deterioration in any direction, refer to Table 10.

Table 10 - Project success performance (Standish Chaos Report 2015)

Modern resolution for all projects					
	2011	2012	2013	2014	2015
Successful	29%	27%	31%	28%	29%
Challenged	49%	56%	50%	55%	52%
Failed	22%	17%	19%	17%	19%

Source: Hastie and Wojewoda (2015)

More recently, the Chaos report of 2020 (Standish Group, 2020) indicates a marginal improvement over previous trends that 50% of software projects are challenged, 31% are successful, and 19% fail. It is evident that, regardless of

project delivery mechanisms and measures towards successful outcomes, the trends in Table 10 continue without significant improvement.

In addition, it is globally reported that non-industry-specific project execution performance remains challenged, regardless of organisational attempts to provide frameworks and mechanisms to execute the projects. The KPMG Reports (2017; 2019) are based on non-specific industry surveys and report similar results to the Chaos surveys for the IT industry.

The KMPG report (2019) suggests a strong commitment to organising project management towards driving organisational strategy and success. From the results of the report in Table 11 below, it is evident that despite structures in business such as portfolio offices, project management offices and methodologies, the project management fraternity struggles to deliver the desired project outcomes. Picciotto (2019) argues that the challenges in project delivery remain consistent and further investigation is required and suggests that (p. 2) “More research is needed to determine why projects may fail or succeed despite poor management and conversely why effective project management performance does not invariably lead to good performance.”

Table 11 - Project success performance

	Criteria	Result
Strategy and Execution	Organisations feel that project success rates, in relation to stakeholder satisfaction, have improved over the past two years	58%
	Organisations deliver successful projects, at least most of the time	19%
	Organisations are likely to deliver projects that meet original goal and intent	44%
	Organisations likely to deliver projects that are on time	30%
	Organisations likely to deliver projects that are on budget	36%
	Projects that are delivered to stakeholder satisfaction	46%
Support mechanisms	Organisations that disestablished a centralised PMO in the past two years	30%
	Organisations that use a centralised or enterprise PMO to co-ordinate projects	40%
	Organisations that regularly track variations to project benefits	48%
	Organisations that conduct projects that include change management capability	63%
	Organisations that feel change management capabilities are very or extremely effective	30%

Source: Adapted from KPMG (2019)

In addition to execution dynamics, KPMG and Standish further explored the extent of standardisation in the support mechanisms towards project

management practices. In contrast to the evident awareness through the utilisation of project management support mechanisms, a nominal 35% success rate remains, and 56% of projects consistently fail to deliver on goal and intent. This suggests that the owner organisations could be challenged in their decision-making process to invest in capital projects towards business expansion or competitiveness. In addition, and for this study, it questions the authenticity of the harmonious co-existence of the permanent and temporary organisation forms.

It is therefore observed that regardless of the existence of Maturity measurement tools and models, the strive towards standardisation in the support mechanisms towards project management practices projects remains challenging. Does this then beg the question as to whether there is not another dimension involved that has previously been overlooked? It is then suggested that the focus remains on the permanent organisation and that the tension created in establishing a temporary structure has remained hidden and received little attention.

2.5 Business context

2.5.1 The two organisation forms

This section discusses the differentiation between the two forms in which organisations exist. Attention is drawn to the fact that the research does not focus on organisation designs, but an understanding of this differentiation is necessary to determine whether and how the two organisation forms co-exist.

Whilst the business appoints a single point of responsibility to implement projects it appears to neglect to support the individual, the project manager (Loufrani-Fedida & Missonier, 2014). It became apparent that despite the appointments of sponsors and steering committees, the permanent organisation's members tend to get on with the business as usual under the supposition that the project manager is making it happen (Hornstein, 2015). When the project manager requires support and assistance from the business, production and day-to-day demands take immediate preference.

It has been observed that when those individuals with ‘fixed jobs’ are allocated to the project manager’s team, they remain responsible in some way or another for their regular key performance areas and remain responsible for delivering those. This dichotomous existence tends to cause stress in the organisation, which in turn stresses the project's progress and success, often to the great detriment of the business (Bakker, DeFillippi, Schwab, & Sydow, 2016).

Typically, disharmonies relate to the state of equilibrium where one force disrupts the effects of another. Then, disharmonies occur when that state of equilibrium is disrupted due to other and external influences (Kwon, Park, Jefferson, & Kim, 2013; Alcorn, Allard, & Schaub, 2018). The context of an imbalance or disharmony focusses on the notion that disruptions, tensions or disharmonies to stable states may have significant effects on intended outcomes within the cohabitation of the temporary and permanent forms within organisations. Stjerne and Svejenova (2016, p. 1772) suggest, “In conceiving temporary organising in the context of permanent organisations, questions arise surrounding the nature of their connection and the tensions inherent in it”.

It is evident that despite efforts in organisations to implement business models, models, methodologies and structure, there appears to be a polarisation between the actors of the permanent organisation and that of the temporary organisation (Burke & Morley, 2016; Bakker, DeFillippi, Schwab, & Sydow, 2016). From the Standish Chaos (Hastie & Wojewoda, 2015) and KPMG (2017; 2019) reports, it is apparent that even organisations that implemented formal project management structures experience project disappointments. Burke and Morley (2016) argue that the fabric of the temporary management systems in permanent organisations is fragile and may even exist momentarily only.

Projects as temporary organisations have been broadly discussed in the literature since 1994. Permanent organisations actively employ efforts towards project success, within the business's technical and organisational structural areas, through implementing methodologies and project management structures. Despite these, persistent polarisation exists between the actors of the permanent organisation and of the temporary organisation.

The literature is rich in discourses on project failure, projects not adding value and organisational inability to execute projects (KPMG, 2019). The literature confirms that the execution of projects requires effective management systems, organisation structures and competent resources, all synchronised and operating in harmony. Whilst organisations strive to maintain systems and structures, it has been observed and experienced that people take tenure of project management positions through coincidence, and this is persistent to be more prevalent than just single observations (Richardson, Earnhardt, & Marion, 2015).

Organisational change is continuous within the modern organisation, and temporary change initiatives are commonly undertaken. In section 2.2.3, the concept is noted that organisations must be sufficiently mature to execute its unique initiatives to the satisfaction of the permitting authorities, which requires the ability to respond to unique pressures through organisation structures and cultures. Citing Eisenhardt and Tabrizi (1995), Oerlemans and Pretorius (2014, p. 1) argue that: “As organisations in more and more industries look for flexible ways of production in the wake of rapidly changing market environments, project-based organising is becoming an increasingly important mode of organisation.”

Two organisation forms; being the permanent and temporary styles, exist concurrently within the modern organisation (Stjerne & Svejenova, 2016) to achieve sustainability and to anticipate and respond to economic mandate dynamics (Winch, 2014; Bakker, DeFillippi, Schwab, & Sydow, 2016). In Table 12, Oerlemans and Pretorius (2014) differentiate the characteristics of the temporary and permanent organisation forms.

Table 12 - Temporary versus permanent organisational systems

Prevalent manifestations	Temporary organisational system	Permanent organisational system
Extent of:		
Temporariness	Ex-ante limited duration	Ex-ante no limited duration
Uniqueness	High degree of novelty, uncertainty and risk, missing routines	Low degree of novelty, less uncertainty and risk, routine-based work
Clarity of command lines	Teams report to multiple superiors	Employees usually report to only one superior
Heterogeneity of organisational unit	Teams composed of diversely skilled experts originating from	Teams composed of members belonging to the same functional

	different functional departments or different firms – different professional and cultural backgrounds	department or division – common professional and cultural backgrounds
Formalisation	Fewer formal structures and processes, more informal coordination	Mainly based on formal structures and processes, less informal coordination

Source: Oerlemans and Pretorius (2014)

It is evident from this discourse that when these characteristics are juxtaposed and exist as concurrent demands within one organisation, human and systems resources become divided in their loyalty and effectiveness. Therefore, divisions place demands on the organisation towards improved maturity to concurrently manage two environments. The concurrent co-existence of the two organisation forms imposes an intersect of subservience between the two forms (Figure 6), requiring fluidity within the firm to respond successfully to the change implementation at a specific time in the organisational lifecycle.

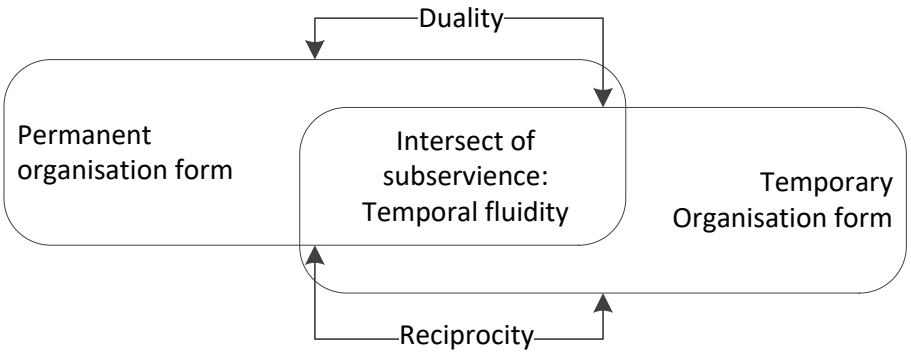

Figure 6 – Duality and reciprocity

Source: Author

This intersection of mutual subservience or duality and reciprocity (see Figure 6) aligns with the prevalent manifestations of Oerlemans and Pretorius (2014) and with the arguments underlying the concepts of Bakker, DeFillippi, Schwab, and Sydow (2016). From the researcher's experiences, and in furtherance to the current literature, it is proposed that whereas the characteristics of these nodes of intersect may be consistent, the dynamics that exist at the time prevailing instant are unique. The concurrent duality and reciprocity between the two forms attempt to synchronise, yet it is evident in the literature and the recent survey

reports from the traditional institutions that projects remain challenged despite the industry responses.

This concurrent existence of two organisation forms places unique demands on its resources (Nuhn & Wald, 2016). Eriksson and Kadefors (2017) argue that organisations that carry out large and complex projects should implement strategies towards endurable and repeated successes. The authors further suggest that (2017, p. 502) "… a permanent function is established to be responsible for implementing and managing the strategy", which is the responsibility of the permanent organisation.

The permanent organisation

Organisations ultimately define their core business utilising frameworks to the nature of Porter's (1985) conceptual 'value chain' philosophy to categorise the 'primary activities' of the firm. Packendorff (1994, p. 24) defines this as the "traditional functional organisation".

By definition, the *permanent organisation* is where those components, elements and actions with predictable and repeatable daily occurrence exist. Such organisations typically focus on established commercial and retail activity. Structures therein are well established, and the authorities and resources within those structures emanate from academic and experiential backgrounds that are consistent with historically production-oriented functionality. It is noted that regardless of the will to establish and maintain consistencies within the permanent organisation, organisational change remains ubiquitous through projects and "… all projects, by definition, are considered temporary in nature with set start dates and end dates, and are managed as temporary entities" (Mazur, Pisarski, Chang, & Ashkanasy, 2014, p. 945).

The temporary organisation

Analogous to the permanent organisation, the *temporary organisation* is established to imitate and execute momentary initiatives in the form of projects,

either as a functionality intramural to the permanent organisation or as an external service provider to the permanent organisation.

Packendorff (1994, p. 24) defines the temporary organisation as follows:

- “a deliberately created structure aiming at evoking a unique process or completing a unique product,
- has a predetermined date or time–related conditional state when the organisation is supposed to cease to exist,
- has clearly stated performance goals,
- is so complex in terms of roles and a number of roles that it requires managerial skills and methods”.

Burke and Morley (2016, p. 1233) argue that temporary organisation tasks typically have to deal with “exogeneity and temporal limitation, uncertainty and ambiguity, complexity, and uniqueness”. Thus, the actions within these organisation forms should be agile, simultaneously proactive and reactive in response to anticipated change and proximate occurrence§.

Whilst the temporary organisation form may be a continuum within established organisations (Müller, Pemsel, & Shao, 2015), the requirement of agility remains a prerequisite. Organisational mechanisms are thus required to address these demands (Eriksson & Kadefors, 2017) and exist in the forms of portfolio, programme and project management offices in organisations as part of the permanent organisation to provide the platform to the temporary organisation from which to execute projects.

Therefore, the temporary organisation form comes into existence temporarily and upon completion of the initiative or purpose for which the temporary organisation came into existence, the temporary organisation is terminated. It could be argued that, in the permanent organisation where unique initiatives are continually executed as part of its regular operations, the temporary organisation form is a permanent member of the permanent organisation, albeit their operational mechanisms are significantly dissimilar.

Temporary organising, with its unique dynamics and influences, is discussed in detail in the section below.

2.5.2 Temporary organising

Temporary organising is the instrument through which the permanent organisation form brings about the intended change through executing a project.

The literature suggests a phenomenon that appears very common in nature, but is complicated in application, namely, businesses are permanent organisations and the changes through project implementation permanently impact on the business (Hornstein, 2015; Gemünden, 2017). Businesses pertain to being permanent. However, when organisational change is required, temporary organisational forms are employed to effect permanence and longevity in the changed situation.

During the execution of projects, the temporary organisation form intrudes on the continuum of the permanent organisation by demanding unpredictable and unfamiliar behaviour temporarily. The permanent organisation form is uncertain as to how to respond to the intrusion by the temporary form and does so in an apparent but unintentional hindering manner, potentially frustrating the actors within the temporary organisation.

These moments of implementing organisational change are temporary events that disrupt the permanent organisation both momentarily and permanently due to change initiatives' lasting and permanent effects. The activity changes the business in the long term and establishes a transformation that the business eventually becomes accustomed to through change management, although the former causes significant momentary disruptions. The need emerges for a temporary and permanent form of organising to exist concurrently and harmoniously within the organisation. To operate successfully, these two forms must maintain an effective and durable relational contract (Stjerne & Svejenova, 2016) whilst the temporary event is in progress. It can thus be concluded that the management of the permanent organisation form is consistent and predictable,

and the conduct of temporary organisation is characteristically intangible until such time as the project is complete. Therefore, it can be interpreted that disharmony or inelasticity between two entities is caused due to the out-of-phases of self-correcting actions. Within the project's temporary nature of the project unique events occur and are auto aligning, but not long enough to influence the permanent organisation's correction cycle.

Van Donk and Molloy (2008) define the project as a temporary organisation (Mazur, Pisarski, Chang, & Ashkanasy, 2014), which comes to an end at project completion (Turner & Mueller, 2003; Lundin & Söderholm, 1995; PMBOK, 2017; PMI, 2017; Winch, 2014; Nuhn & Wald, 2016). This short-term nature of projects involves complex temporary work environments (Mazur, Pisarski, Chang, & Ashkanasy, 2014), and the endeavour as a temporary organisation is created to fulfil a special purpose of enabling the execution of the project (Lundin & Söderholm, 1995).

Further to the characteristics of organisational forms, an understanding of temporary organising must be developed, which will focus on the interest between the uninterrupted permanence and the distinct interruptions. Yet and despite attempts to create a project management environment within permanent organisations, “many systems do not smoothly move between these two realms but instead exhibit quite different patterns of behaviour, even though from the outside they seem so close” (Miller & Page, 2007, p. 7). It can thus be deduced that there is already a hint towards disharmony because they seem close at the evident level, but they have different behaviours.

The relative novice state of formal project management practices and guidance suggests that a limited understanding of the complexity of the work environment exists and that although research is active, the subject is not yet exhausted. International and domestic projects differ significantly in terms of culture, language, laws and resources, and the international market has not yet reached harmony regarding project management standards. (Grisham, 2010).

The formalisation of project management as a core function in the permanent organisation remains a dilemma.

Research by Padalkar and Gopinath (2016) summarised the findings of 189 highly cited research articles, revealing that the general research focus pays little attention to the subject of maturity. Although, according to Kerzner (2005; 2017), the Project Management Office and Integration Management typically feature strongly in Maturity in project management, Padalkar and Gopinath (2016) suggest that on a scale of 20, Project Management Office and Integration Management rank lowest at 19 and 20 respectively. Therefore organisations are still struggling with the concept of agile temporariness, where the management paradigm is that of functional hierarchies.

Padalkar and Gopinath (2016) ranked Risk, Success, Knowledge, Time and Portfolio (in that order) as the most emphasised research topics, from which it is gathered that organisations favour independent project performance in contrast to total organisational performance. According to Turner and Mueller (2003) and Winch (2014), the temporary structure exists concurrently with the permanent or parent organisation (Nuhn & Wald, 2016), complete with its actors, where the project team essentially simulates the executive of the permanent organisation, suggesting that competency is required at all levels in both organisations to create a symbiotic relationship effectively. Oerlemans and Pretorius (2014) chart the permanent and temporary organisation forms, juxtaposing the dissimilarities. The disposition of the two organisation forms is prominently polarised yet are required to collaborate towards the common goal.

Engwall (2003) calls for an ontological transformation to reject the notion of projects existing as individual entities but rather to be managed as ‘embedded open systems’; thus further motivating the construct of a controlling environment for project management. Johansson, Lofstrom, and Ohlsson (2007, p. 498) argue that projects do not exist as entities separate from the permanent organisation and are “embedded in their technical and instructional environment”. Blomquist and Packendorff (1998), propose that symbiosis is required, where there should exist a bidirectional relationship between the project organisation and the

permanent organisation (Nuhn & Wald, 2016). The distinctiveness of projects demands commensurate creativity and flexibility of the parent organisation (Modig, 2007), and the resources within the temporary organisation are required to know how to respond accordingly to the permanent organisation (Lundin & Söderholm, 1995; Nuhn & Wald, 2016).

According to Johansson, Lofstrom, and Ohlsson (2007), the project organisation detaches from the permanent organisation during the execution of the project, and re-attaches on completion. The authors further argue that the change initiative's success is conditional on the level of the embeddedness of the temporary organisation within the permanent organisation, and projects and their execution structures are, therefore, extensions of the permanent organisation.

This dichotomous phenomenon of detachment and embeddedness suggests that there should exist a duality and reciprocity in the function and focus of the two organisational types (Winch, 2014). Following the view that projects exist as organisations within organisations (Turner & Mueller, 2003; Winch, 2014), it is thus proposed that the permanent organisation is required to be subservient to the project, even though the project is subservient to the permanent organisation. It can be concluded that during the detachment, the project is required to function in parallel to the permanent organisation during the project and relies on the permanent organisation for support.

However, the belief that the integration should be seamless is not yet a reality. Söderlund, Vaagaasar, and Andersen (2008, p. 518) observed that, despite the above motivations of symbiosis, "…mainstream analysis of project competence tends to neglect the interrelatedness of the competence developed at the project level and the competence developed at the organisational level." As Garel (2013, p. 663) argues, "In the business world as well, project mode is rarely institutionalized…" According to Van Donk and Molloy others argue that project management in organisations is marginalised, where the projects are (2008, p. 130) "seen as separate entities… somehow untouched by the activities of the host organisation".

Notwithstanding that the project management functionality is becoming embedded in the business, "… organisations fail in implementing their strategies even though they employ project, programme and portfolio management techniques" (Serra & Kunc, 2014, p. 1). This view is held by others who also suggest that despite steps taken to improve project delivery performance, projects continue to be challenged (KPMG, 2019; PMI, 2015; ProjectSmart, 2014). Given the developments in project management governance and methods, it is apparent that the project success rate has not taken the expected leap with these introductions (Whitty, 2005; Chigbo, 2013; Mir & Pinnington, 2014). Modig (2007, p. 809), submits, "… a weaker relationship often exists between the temporary organisations formed to carry out these tasks and potential stationary 'parent' organisations".

Arvidsson (2009) suggests that resources within projectised organisations experience tensions originating from internal organising principles, where the employees serve either line functionality or they serve projects with contrasting demands. The management of permanent organisations thus faces significant challenges in determining the relation between the actors of temporariness and their organisational context (Sydow, DeFillippi, Schwab, & Bakker, 2014), thus presenting delivery challenges. Quoting Chigbo (2013, p. 109) "… much of apparent inefficiency and wheel spinning is inherent in the nature of temporary organizations" realistically, the permanent organisation is affected by the actions of the temporary organisation.

It is submitted that project management behaviours vary significantly, even amongst practitioners within the same organisations (Goetz, Wald, & Freisinger, 2021). A deeper level of understanding regarding temporary and permanent organising and the different characteristics of such organisation forms is required. In the following section, the concept of project organisation structures will be discussed as to its contribution towards understanding the disharmony between the temporary and permanent organising forms.

2.5.3 Project organisation structures

Ultimately, business executives seek organisation structures that stimulate teamwork, effectively utilise limited resources and achieve the desired qualities in net execution of unique initiatives. This further requires adequate control over the business management mechanisms and the delivery of business goals and objectives. The traditional structure of the functional organisation that predominated prior to the 1970s, due to its inflexible tendency, is no longer adequate in the modern business environment. There is an organisational uncertainty as to where the real responsibility lies, and the question is whether it lies with the persons overseeing the task or with the permitting authority. Pinto and Patanakul (2017, p. 229) state, “Responsibility is clear; authority is murky.”

Kerzner (2017) argues that new organisation structures surreptitiously emerged since the 1970s when management became aware that organisations need to be dynamic and rapidly respond to changes in business ecologies. Organisational restructuring, and the ability to do so without delay, increasingly become common practice where firms need to react speedily to market factors, introductions of new technologies and the requirement of improved control over resources. A further awareness emphasises the need to evolve traditional management styles towards behavioural cultures where the needs of both the firm and the human resources are considered holistically.

Thus, executive maturity at an individual level is required to tolerate and respond to the dynamics and develop and implement organisation structures best suited to the prevalent business environment. Kerzner (2017, pp. Kindle Loc. 1452-1457) states that:

> “In many companies, project management existed in only a small portion of the business, which made it difficult for some projects to get total company support. Executives began realizing the complexities of resource control and effective project staffing. In addition, the rapid rate of change in both technology and the marketplace had created enormous strains on existing organizational forms. The traditional structure, which was highly bureaucratic,

showed that it could not respond rapidly enough to a changing environment. Thus, the traditional structure was replaced by project management, or other temporary management structures, that were highly organic and could respond very rapidly as situations developed inside and outside the company."

A number of organisation structures (see Table 13) are discussed, which may be used for project management and general management, each with its advantages and disadvantages. These structures relate to the assembly of human resources in controlled environments and their relationships to management in control of the reporting functionality.

Table 13 - Organisation structures

Organisation structures	
Functional organisation	Traditional, top down order of hierarchy
Matrix organisation	Weak matrix: Requires high levels of maturity, shared levels of responsibility
	Balanced matrix
	Strong matrix: Provides enhanced control, designated levels of responsibility
Projectised organisation	Focussed execution, designated levels of responsibility

Source: Author – derived from Kerzner (2017)

Organisation structures are designed according to organisational strategies and operating themes, and the organisation's maturity may also influence these designs. It was observed in the literature, that there is not a single organisational form as the practice norm. In addition, it was noted that structures vary amongst organisations and even amongst projects within organisations.

The role and authority of the organisation's management resources vary greatly between the different structures see Table 14. As the single point of responsibility, the project manager's influence is progressed in terms of accountability from being limited in the functional hierarchy to being complete in the projectised organisation. Each of these structures has its own merits, but various levels of maturity are observed in relation to each structure form.

Table 14 - Influence of organisation structures on projects

Organisation structure		
Functional	**Matrix**	**Projectised**

			Weak matrix	Balanced matrix	Strong matrix	
Project characteristics	**Project manager's authority**	Little or none	Low	Low to moderate	Moderate to high	High to almost total
	Resource availability	Little or none	Low	Low to moderate	Moderate to high	High to almost total
	Who manages the project budget	Functional manager	Functional manager	Mixed	Project manager	Project manager
	Project manager's role	Part-time	Part-time	Full-time	Full-time	Full-time
	Project management administrative staff	Part-time	Part-time	Part-time	Full-time	Full-time

Source: PMBoK (2017)

The functional organisation structure (PMBOK, 2017)

The functional organisation structure is notably the most established organisational methods and remains one of the most successful in non-complex environments. The approach performs best when used for routine work functions and upholding quality and work standards. Functional organisation structures assign projects in two different ways. One way involves the project being assigned to a specific functional manager who then coordinates with the other departments for them to each contribute. Alternatively, projects can be rearranged to different departments where each department manager ensures that their work has been completed.

This approach does not function effectively when used in facilitating complex projects, resulting in the advent of matrix organisation forms in the 1960s (Schnetler, Steyn, & Van Staden, 2015). One of the major criticisms of this organisation structure is the lack of in-built employee recognition, measurement and reward for project performance. Similarly, there is limited individual accountability for any project management task that needs to be performed. This type of organisation is not ideally suited for project management, as projects tend to be carried out within the organisation's functions and are not managed as separate entities. This organisational structure assigns designated functional staff members to projects within the function. The scope of the projects is therefore often limited to the expertise residing within a specific function.

Due to the matrix structure, it is challenging to undertake diverse projects that require a wide range of expertise distributed across functional boundaries. This type of organisation structure does hold an advantage in that each staff member reports to one manager only. Thus, clear-cut lines of authority and responsibility are in the traditional organisation structure as illustrated in Figure 7 below.

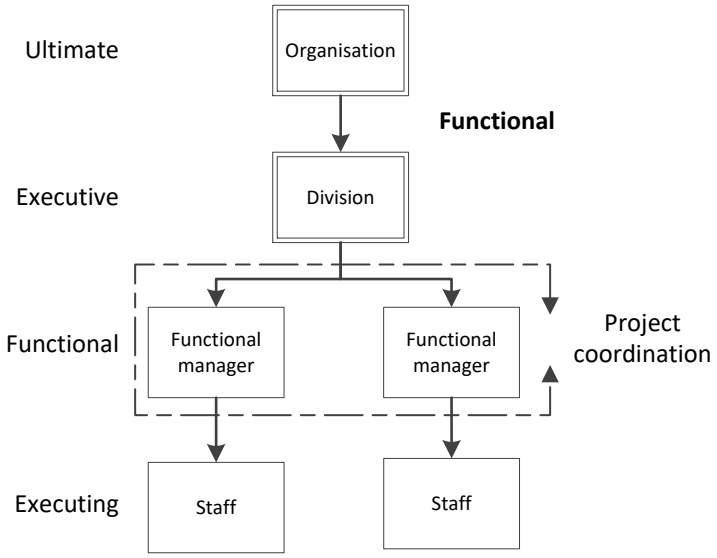

Figure 7 - Functional organisation structure

Source: Author – Derived from PMBoK (2017)

When projects sometimes cross functional boundaries, and staff members from various functional areas are assigned to the same project, the responsibility for project co-ordination resides with the functional managers, according to Duncan (1996). This may lead to, if not managed with great caution, conflict of interest within managers concentrating on furthering their department's objectives, ultimately resulting in project failure. Resources may selectively become reassigned without consultation with other management team members, imparting distrust within management teams. The functional resources may become distracted towards other projects' demands and deliverables are compromised or fail entirely.

The matrix organisation (PMBOK, 2017)

The matrix organisation structure comprises three subsets and is a management structure that evolved from recognising inherent flaws in the functional

organisation and pure project organisation structures. Created in the 1960s (Schnetler, Steyn, & Van Staden, 2015), this structure combined the best components of these two structures. This model functions well when multiple projects are in progress and being coordinated at once. The functional managers oversee the staffing, training, job assignment and evaluation of the project's personnel. The functional specialists are assigned to one or more projects and oversee that these individualised projects achieve their objectives, and are completed through maximum resource efficiency.

Despite recognising and avoiding the flaws involved in other structures, the matrix organisation presents inherent complexity. Individual employees are accountable to at least two managers, often leading to ambiguity and conflict (Arvidsson, 2009; Stare, 2011). This management form requires varying levels of organisational maturity and astute resources.

This type of structure has the inherent capacity to be disposed toward either of two extremes, the weak matrix or the strong matrix at either end of the continuum. Within that band, a balanced matrix exists between the two extremes and, subject to business operating structures, could vary towards either assembly, subject to the project demands and individual resources capability.

The weak matrix organisation (PMBOK, 2017)

As introduced in the discussion of the matrix organisation above, the weak matrix (Figure 8) exists when resources from different occupations and business areas are assigned to project tasks and serve on cross-functional project teams accountable to the project manager. This form requires significant organisational maturity, and the ability of managers and teams to effectively maintain durable working networks.

The team members in this structure remain concurrently responsible for other tasks assigned by their regular line manager while serving the project manager's interests. Consequently, these members effectively remain accountable to two managers with different business interests. Instances may exist where members

serve on multiple projects simultaneously and thus report to a group of managers, each with different interests and contrasting demands.

The project manager is responsible for the delivery of the project, and the line manager is responsible for other routine operations. In this instance, the project team members simultaneously serve the temporary and permanent organisation forms and are required to respond to contrasting and diverging demands. As the single point of responsibility towards the anticipated project outcomes, the project manager is not empowered to exert the required agency over team members and becomes a coordinator of the activities of resources over which he has limited control.

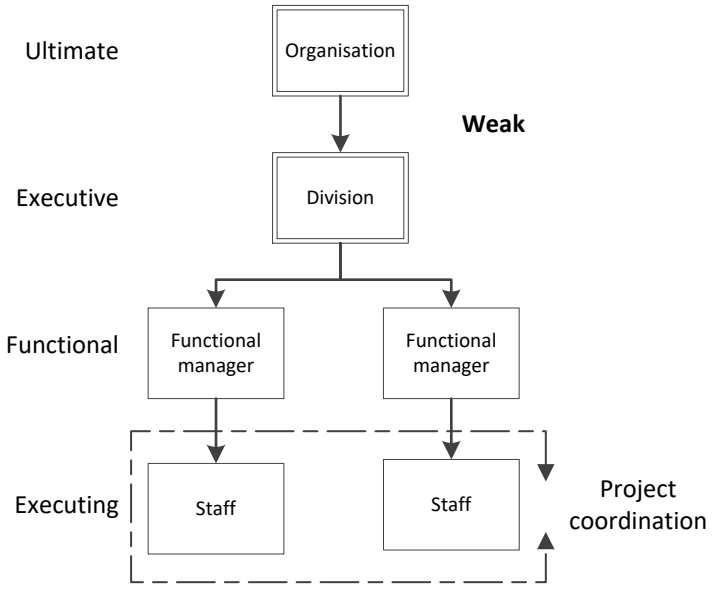

Figure 8 - Weak matrix organisation structure

Source: Author – Derived from PMBoK (2017)

The balanced matrix organisation (PMBOK, 2017)

The balanced matrix organisation expands the project manager's authority and level of control from the weak matrix. The project is executed from within the functional hierarchy of the organisation, and the project manager is sourced from within that environment. In this structure, a project manager is not particularly dedicated to the functional role of project manager and exists temporarily only,

subject to business innovation demands. On completion of the project, the project manager returns to his regular role.

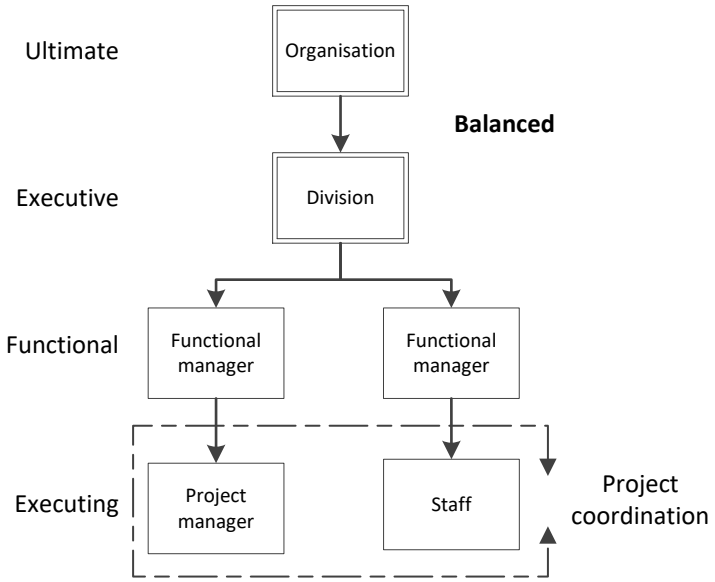

Figure 9 – Balanced matrix organisation structure

Source: Derived from PMBoK (2017)

The strong matrix organisation (PMBOK, 2017)

Within the matrix context, the strong matrix form exists at the opposite extreme of the continuum, where the team members report to the project manager regarding project activities. At functional hierarchy, the project management discipline exists autonomously from other functional hierarchies, and the project manager reports into a line management function dedicated to the execution of projects. The project team members are still sourced from the functional areas but become primarily accountable to the project manager. Upon secondment to the project manager, the resource is enrolled within the project manager's organisation and remains there until the completion of relevant assignments.

Line-specific discipline management continues to provide contextual and systems enablement support to the team members but do not assign direct actions to the members. To this effect, the project manager singularly determines team member outputs. In contrast to the weak matrix, the project manager thus exerts full agency over the resource and activities.

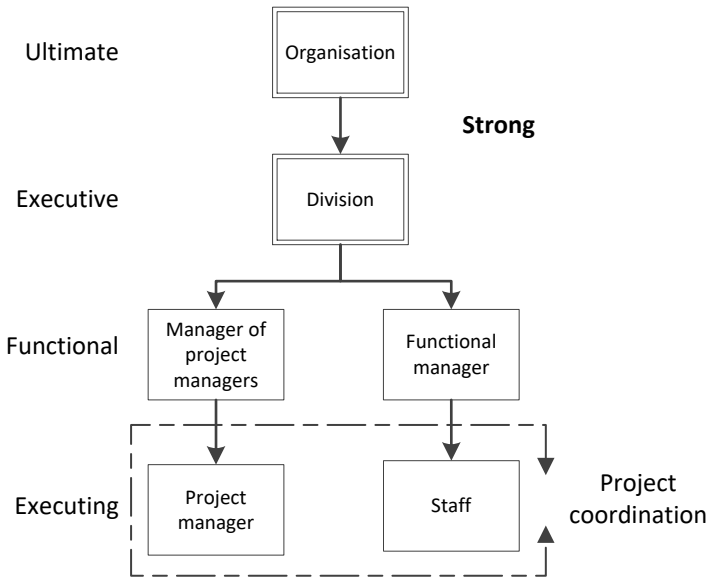

Figure 10 – Strong matrix organisation structure

Source: Derived from PMBoK (2017)

The projectised organisation structure (PMBOK, 2017)

The projectised organisation comprises dedicated project teams, each with their own project manager. This organisation structure is the extreme opposite to the functional organisation structure and applicable to organisations that concentrate on managing projects on behalf of clients, or whose sole purpose is working only on projects.

The projectised organisation structure is specifically designed for executing projects that are executed over extended periods and are large enough to justify an autonomous establishment. It is uniquely tailored to meet the demands of complex projects by isolating unique work and maintaining a strong focus on completing the project. Once the project is completed, this structure disbands, effectively maintaining dedicated resources throughout the project's life.

It is inherent to this structure, due to the temporary existence thereof, that after project completion, the firm is unlikely to benefit from skills and technology transfers to the permanent organisation. During the project lifecycle, team cohesion improves due to familiarity with the project dynamics and becomes most efficient towards completion. During execution, team members may become

ineffectively utilised due to the resources only being dedicated to the project for its lifespan.

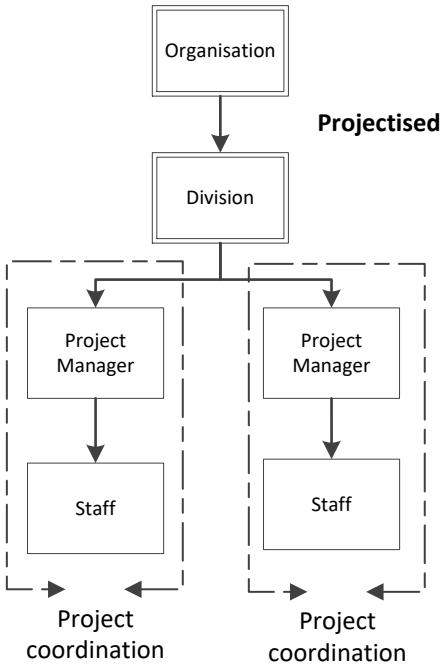

Figure 11 – Projectised organisation structure

Source: Author – Derived from PMBoK (2017)

There are various designs in terms of organisational structuring that can be utilised and complexity in projects dictates the nature and type of design required. It is noted that fracturing is inherently prevalent in the matrix organisation if it is present in the Functional hierarchy. Therefore something other than structural design is required to make projectised organisational designs more efficient and eliminate the inherent fracturing.

2.5.4 Relational validity between the temporary and permanent forms

Organisation structures comprise human actors, and the successful deployment of these coincides with the appropriate utilisation of control mechanisms. Agarwal and Bhargava (2013) submit that workers who are positively engaged and dedicated are critical to the firm's sustainability and future successes. This anticipated success is heavily reliant on the willing participation amongst the firm's employees. Voluntary cooperation between its workers is thus central to organisational functions, yet it remains an informal dynamic without formalised

control mechanisms through which workers are obliged to willingly contribute to the firm (Rousseau D. M., 2011).

Denise Rousseau (1989) introduced the concept of the ‘Psychological and implicit contracts in organisations’ to promote the psychological convention between managers and workers. Although Rousseau’s school of thought is viewed as authoritative, it must be noted that the term ‘psychological work contract’ was first proposed by Argyris (1960) in his book; Understanding Organizational Behavior. At that time, the concept was loosely defined, yet recognised that changes in relationships between workers and foremen occur, concomitant with the foremen’s behaviours.. Levinson, Price, Munden and Solley (1962) argue that regardless of formalised relationships, an underlying contract exists due to mutual expectations and specifically, psychological needs.

The psychological contract enjoys significant attention in the literature and the dual nature of psychological contracts is emphasised. Rousseau (1995, p. 9) most appropriately defines the notion as: "…individual beliefs, shaped by the organization, regarding terms of an exchange agreement between individuals and their organization".

The temporary organisation and permanent organisation forms co-exist concurrently and work towards the same outcome. This is only possible if resources can function without distress and if the same symbiosis exists between managers and workers towards the establishment of mutual trust and cooperation. The notion of the duality and reciprocity between leaders and followers is furthered by maturity in management resources to function as leaders to solicit the best behaviours in resources.

Figure 12 presents a behavioural paradigm towards establishing relational validity between managers and workers or leaders and followers. The convergent archetype of traditional management styles contrasts with the divergent archetype of leadership. It must be noted however that these two behavioural styles are interdependent and cannot exist mutually exclusive.

During complex decision making (Figure 12), intervention demands require a unique response comprising a blend of the operating nodes of the two archetypes. The demand for intervention includes unique complexity attributes that require both perception and firmness. Based on the constituent elements of complexity, complexity of product and fact can be solved through applying management, however complexity of faith requires leadership action and not just an incumbent in a role or position. The reciprocating node of intersect reveals a distinctive and momentary archetype, a disproportionate amalgamation of contrasting elements. The resulting intervention needs to be cognisant of the maintenance of the relational contract in a manner that whilst authority is established, an outcome is achieved that contributes to success and learnings towards improved operational dynamics.

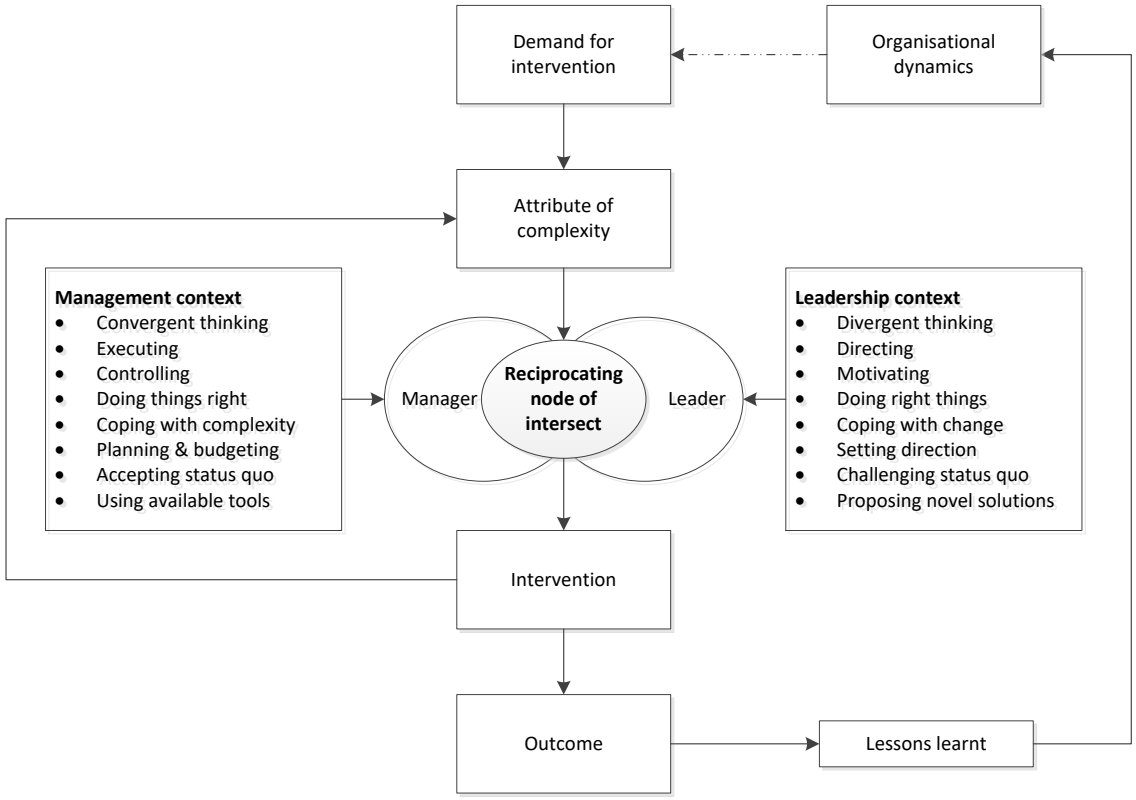

Figure 12 – Establishing relational validity

Source: Author

From the above, the concept of disentangling complexity is closely related to the sociology of translation (Latour, 2007), where the main actor would also need to adopt varying interactive styles. This can then contribute to the activities and

management styles of the main actor(s) during the 'problematisation' and 'interessement' activities when establishing punctualised actants. In addition, it is known that this punctualisation must be maintained, and the principles of relational contracts with the concepts in Figure 12 would prove valuable. With relation to Actor-Network Theory and its sociology of translation, it can be concluded that the psychological contract as a concept is relevant. The relevance resides in the fact that changes in the contract would require new efforts of problematisation, interessement, enrolment and mobilisation and then, maintenance of the stability of that relationship through the continued practice of the sociology of translation.

2.5.5 The organisational paradox

In the organisational pursuit of excellence, be it anticipated performance successes demanded by stakeholders, sustainability pressures or competitive advantage, business continuity management dynamics place further pressures on the execution of unique initiatives. Inadvertently, these complexities give rise to inherent organisational paradoxes (DeFillippi & Sydow, 2016).

Operational performance demands compete directly with the results of the management and decision-makers, who established contrasting cultures that gave rise to organisational imbalances in the first instance (Fischbacher-Smith, 2017). Temporariness and permanence are opposites yet have to coexist towards the same goals. Fischbacher-Smith (2017, p. 90) argues that management systems that are "… based on the rational, positivistic approach to management – that assumes that if you can measure it you can manage it – and yet it is seeking to deal with the demands generated by non-linear systems in a largely linear way". Through the paradoxical character of the symbiosis of permanent and temporal execution structures, projects are unique by nature (Kerzner, 2017) and by no means undeviating, and, that tenet of uncertainty (Sydow & Braun, 2018) does not support linear management practices. Therefore, attempting to seamlessly embed the project management behaviours within the highly structured permanent environment inadvertently causes

paradoxes within the organisation. DeFillippi and Sydow (2016) introduce a series of paradoxes that arise in project organisations, which they highlight as ‘paradoxical tensions in project networks’, see Table 15.

Table 15 - Paradoxical tensions in project networks

Paradox	Tenet	Impact
Distance paradox	Tensions between the temporary and permanent organisation	Resources in the two organisation types cease to collaborate
Learning paradox	Tensions between knowledge creation and knowledge transfer	Knowledge is not circulated upon project termination
Identity paradox	Tensions between individual and collective identity	Resources resistance to collaborate with individuals from other organisational loci
Difference paradox	Tensions between crafting and standardising practices	Standardised policies contradict the nature of the project’s innovative requirements
Temporal paradox	Tensions between past, present and future work	Reliance on historical co-optive experience and distrust of present and future reliability

Source: Adapted from DeFillippi and Sydow (2016, pp. 7-9)

The organisational paradox is thus prevalent within the permanent organisation form where there is a demand of interconnectivity between the various operational faculties (Kerzner, 2017) to eliminate operational islands, but the phenomenon exacerbates the disharmony between the temporary and permanent organisations. If all of these paradoxes are viewed in terms of complexity, it still only calls for handling the complexity in terms of complexity of fact and product, it still does not address where the competence of handling complexity of faith resides or play a role.

In the following section, the attention will be directed towards a different perspective on evaluating project success and outcomes. This is done through conducting a discussion on optimism bias.

2.5.6 Optimism bias

Despite the optimism that projects will succeed, the literature and authoritative bodies still indicate the contrary (KPMG, 2019), that projects continue to fail and underperform. Organisations undertake projects and working initiatives with the primary assumption that ‘it will be ok because person X is competent and will look

after it.' Management were often asked during senior management and executive conversations; 'Why are we where we are?' The common response is that the persons allocated to deliver are assumed competent. An innate persuasion amongst executives was observed to hold those responsible to task and implement disciplinary action, with little regard to the fact that the entire dilemma could have been averted if attention was paid to those elements that entrench optimism bias.

Weinstein (1980, p. 806) suggests that: "people judge negative events as less likely to happen to themselves than to the average person, a behaviour interpreted as showing that people are 'unrealistically optimistic' in their judgments of risk concerning future life events". When business investment opportunists present projects as wise investments to permitting authorities, there is an inevitable optimism aura created that not only will the project deliver on its anticipated outcomes but that the executing entity will deliver as undertaken. This occurs when people are generally overoptimistic due to their inclination or desire for the anticipated outcome to be successful (Krizan & Windschitl, 2007). The authors argue that this 'wishful thinking' depresses the empirical evidence that the probability of a desirable outcome could be limited.

Prater, Kirytopoulos, and Ma (2017) contend that project baselines are unrealistic and often unachievable from the onset due to optimism bias and that mitigations for schedule failures are not yet exhausted. The authors suggest that optimism bias be contemplated as a risk to be managed through the projects and that early signs of non-performance are recognised accordingly.

According to Patanakul and Pinto (2017), projects are ubiquitous in organisational change initiatives as temporary events. The authors argue that many projects are created, and support is elicited with only partially complete information and with unrealistic expectations. Patanakul and Pinto further state (2017, p. 231); "the irony is that many of these false assumptions are derived in spite of clear, historical evidence to the contrary."

Therefore, and as has on many occasions been observed, the permitting authorities uncritically buy into the project, the sponsor unquestioningly follows the project management team, the project manager unquestioningly follows the technologists, and, the project team unquestioningly waits for the support services team to perform. Yet, betrayal by the individuals towards their undertakings is ubiquitous, as evidenced by the impacts of the five paradoxes discussed in Table 15 on page 73. Optimism bias is present in the selection of projects and when challenges are experienced, optimism bias tends to negate the seriousness of the situation. When it emerges that the situation is difficult, blame-shifting causes tensions and a deterioration of relationships. It appears that initial optimism bias negates the differences between permanent and functions vis a vis the project and its interdisciplinary focus, and then when there are problems, disloyalty occurs and the disharmony is exacerbated.

2.6 Conclusion

In this chapter, key concepts were discussed concerning the management of projects and the business frameworks within which they exist.

It can be deduced from the discussion that projects are, in nature, temporal and complex. Project management is relatively new in comparison to other managerial sciences. A project can or cannot be part of the permanent organisation or be separated in totality. Project management and project managers have developed knowledge methods and methodologies similar to yet different from mainstream disciplines. The development of project management as a discipline and that the project manager requires different capabilities from those members of the permanent organisation. There exists a consensus in the discourses within the literature concerning the persistent tensions between the permanent and temporary organisation forms. There is an apparent misperception that agility exists in the execution of projects that provide sustainability in product delivery, with limited consideration that a permanent organisation form is required to support the temporary organisation's dexterity.

Project management was reviewed, and its application as an organisational change initiative; be it for profit or continuous improvement, was confirmed. It is known that projects fail and succeed due to a variety of issues and predominantly remain challenged. It was discussed that the permanent organisation attempts to manage the endemic uncertainty of projects by establishing organisation structures, mechanisms and a single point of responsibility. Optimism bias is discussed as the inevitable leap of faith in undertaking unique initiatives.

The temporary and permanent organisation are required to coexist, and some relational contract, be it a tacit agreement or inferred, needs to exist, and to this effect, the leadership and followership context is introduced. Due to a project's inherent instability and the permanent organisation's stability aspirations, organisational paradoxes emerge, placing further tensions on the resources in both organisational forms.

Change causes stress to most people, and in groups called organisations, people are tasked to manage change and the accompanying stress collectively. The discussion on maturity indicates that fragmentation occurs in hierarchical designs. Pictorially, this fragmentation resembles a matrix. There is a caveat from this observation that fracturing creates islands and isolation and should not be misconstrued with matrix organisational designs. The research explored the traditional organisational designs employed in projectised organisations to alleviate this misconception. Regardless of these existences, it is evident that the simultaneous presence between the permanent and temporary organising forms exists but is not satisfactorily harmonised, nor is the literature conclusive on the nature of the tensions or proposed remedies.

It is concluded from the discussion and the literature that projects are temporal and complex. Project management is relatively new in comparison to other managerial sciences. A project can or cannot be part of the permanent organisation or separated in totality. Project management and project managers have developed their own bodies of knowledge methods and methodologies that are similar yet different from mainstream disciplines. The development of project management as a discipline as well as that of the project manager, require

different capabilities from those members of the permanent organisation. It leads to the position that fertile ground exists for the development of disharmonies.

There exists a consensus in the discourses within the literature concerning the persistent tensions between the permanent and temporary organisation forms. There is an apparent misperception that agility exists in the execution of projects that provide sustainability in product delivery, with limited consideration that a permanent organisation form is required to support the temporary organisation's dexterity.

In this chapter, key concepts were discussed about the management of projects and the business frameworks within which they exist. Project management was reviewed in a broader context and confirmed its application as an organisational change initiative for profit or continuous improvement. It is known that projects fail and succeed due to a variety of issues and predominantly remain challenged. It was discussed that the permanent organisation attempts to manage the endemic uncertainty of projects by establishing organisation structures, mechanisms and a single point of responsibility. Optimism bias is discussed as the inevitable leap of faith in undertaking unique initiatives. Yet, the temporary nature of the project requires specific attention to managing its temporariness. The temporary and permanent organisations are required to coexist and some relational contract, be it a tacit agreement or inferred, needs to exist, and to this effect, the leadership and followership context is introduced. Due to a project's inherent instability and the permanent organisation's stability aspirations, organisational paradoxes emerge, placing further tensions on the resources in both organisational forms.

The research with the literature as a source has uncovered that the management style of project management remains fashionable as the mechanism to implement organisational change. Regardless of these existences, it is evident that the simultaneous presence between the permanent and temporary organising forms exists but is not satisfactorily harmonised, nor is the literature conclusive on the nature of the tensions or proposed remedies. The problem of disharmony remains persistent and continues to enjoy attention in the literature.

Projects are complex undertakings as the work environment continues to be more and more complex; the working world requires more and more generalists and cross-pollinated employees, yet despite the development in project management and general management, there is insufficient evidence that this situation is changing. This is noticeable in the recruitment activities where the project manager is not essentially defined. It is submitted that disharmonies are thus perpetuated by human resources practitioners and organisational development specialists that cohere to the paradigm of work separation and functional hierarchical designs, despite experience and research indicating that agility is required.

Having established a contextual view of the status quo and the current situation as informed by the literature, the following chapter will discuss the theoretical lens as a perspective to review the tensions and posited disharmony towards developing a construct towards improving the observed phenomenon.

Chapter 3 Theoretical considerations

A theory is demarcated by Strauss and Corbin (1998, p. 22) as “a set of well-developed categories (e.g. themes, concepts) that are systematically interrelated through statements of relationship to form a theoretical framework that explains some relevant social, psychological, educational or other phenomenon”. In the case of this research, Actor-Network Theory (ANT) (Latour, 1990; Latour, 1996; Latour, 2007; Law, 2009; Callon, 1986) serves as theoretical background for the discussion of the literature review and is later further explored towards mitigation of the research problem.

As a constructivist, the researcher approached the literature review from a subjective ethnographic philosophy to critically probe for reality, existence and the impact of the observed phenomenon or research problem on the organisation, more specifically, the project management space. The theoretical framework discussed serves as a broader body of knowledge against which to position this study. In this chapter a discussion is conducted with regards to the theoretical underpinnings of the study and interpretive context of the research problem. It is argued that the observed phenomenon and its subsequent contributing element of organisational disharmony can be better understood from the key tenet of Actor Network Theory (Callon, 1986; Latour, 1987). In viewing the observed Phenomenon form an ANT perspective, it is argued that:

“…the eccentricity of the management of projects aligns with complex networked ecologies, comprising a sociotechnical network of human and non-human actants with agency and influence, which is continually changing.”

ANT is introduced at this point to establish the theoretical underpinning, and the relevance thereof and its application to the study are discussed in detail later in sections 5.1.5 and 5.2.5.

3.1 Actor-Network Theory

The complex ecosystem of project managers, their processes, control systems and the relationships through which these interactions determine the ontological perspective of a flat network of connected components that interact in a manner that holds together a stable and durable network. In addition, and as a social reality, projects display the characteristics of complex and networked environments.

Actor-Network Theory is presented as the critical theoretical lens through which to explore the research problem. It is argued that the eccentricity of the management of projects aligns with complex networked ecologies (Sydow & Braun, 2018), comprising a sociotechnical network of human and non-human actants with agency and influence (Sayes, 2014), which is continually changing. Responding to the individualism of the project as an organisational advance initiative, a temporary organisation form is established, requiring unique resources to coexist in a fashion that demands an extraordinary appreciation of the temporary environment and other resources (Bakker, DeFillippi, Schwab, & Sydow, 2016). These resources are assembled from varying sources within organisations and are assigned to the project environment subject to governance and control by the project manager and relevant management systems. This effectively entails that humans are detached from their familiar routine tasks to temporarily become embedded in an organisational form that requires a cultural realignment (Sydow & Braun, 2018).

The seminal works of Michel Callon (1986), Bruno Latour (1987) and John Law (1987) inform the context of ANT. Further explorations associating the applicability of ANT to the subject under study revealed influential research relating to project management and project complexities. ANT is “the sociology of translation, concerned with the mechanics of power” (Law, 1992, p. 380) or “enrolment theory” (Crawford, 2005, p. 1) emerging from interests in science and technology studies and was developed following the works of French scholars Michel Callon and Bruno Latour during the 1980s (Crawford, 2005). The notion proposes that humans and non-humans attribute non-discriminate influence or

'agency' in networked assemblages, where symbiotic orientations of heterogeneous elements exist towards organisational congruence. According to Law (2009, p. 156), ANT is "…a disparate family of material-semiotic tools, sensibilities, and methods of analysis that treat everything in the social and natural worlds as a continuously generated effect of the webs of relations within which they are located. It assumes that nothing has reality or form outside the enactment of those relations." ANT is interested in the webs, the interconnectivity and the rehearsals that carry these material-semiotic conducts.

ANT depersonalises the identities of both humans and non-humans by adopting a unique terminology rather descriptive of the nature of the heterogeneous society. The abstract language of ANT proposes a discourse to focus on the values of the elements of the network, denying the privilege of one element over another, thereby resisting natural human bias. Actor-network theory presents a series of basic concepts, or ideas, through which various human and non-human actors are attracted to and enrolled within a unique or temporary initiative. In order to understand the language of ANT, the following key concepts are stated in the table below.

Table 16 - Key concepts of ANT

Concept	Definition
Actor	Both human beings and nonhuman actors such as technological artefacts.
Actor-network	Related actors in a heterogeneous network of aligned interests, including people, organizations and concepts.
Inscription	A process of creation of artefacts that would ensure the protection of certain interests.
Translation	The process of alignment of interests of a diverse set of actors with the interests of the focal actor with the aim to mobilize support.
Problematisation	The first moment of translation, during which a focal actor defines identities and interests of other actors that are consistent with its own interests and establishes itself as an Obligatory Passage Point, thus rendering itself indispensable.
Interessement	The second moment of translation, which involves negotiating with actors to accept the definition of the focal actor.
Enrolment	The third moment of translation, wherein other actors in the network accept or get aligned to the interests defined for them by the focal actor.
Mobilization	When one solution gains wider acceptance and a larger network is created.
Obligatory Passage Point	A situation that has to occur for all the actors to be able to achieve their interests, as defined by the focal actor.
Irreversibility	The degree to which it is impossible to go back to a point where alternative possibilities exist.

Source: Rivera González, Cox, and Flores Zambada (2012)

3.1.1 Classifying ANT

Michael (2017) presents several critical characteristics of ANT. First, access to nature is limited, and scientists must derive or construct comprehensions of reality through the enactments of humans, non-humans and inscriptions. These elements that exist and interact within a contained environment emit knowledge to convert others to the objectivity of the 'social's' scientific knowledge. Then, texts or scientific scripts are applied to persuade others of the authenticity of the social order, and finally, the successful orientation of the actors enrolled on the project could result in a resilient or 'durable' network.

Latour (1996) argues that society emerges as flat networks of associations by humans, non-humans, technologies and other semiotic materials. These flat networks rely on the contributions of the actors and participants in the network, and the physical or geographical proximity of these participants is inconsequential. ANT is not conditional to a vertical hierarchy or specific spherical topology within which the network exists; the society instead comprises filaments that reach out to form connections. For ANT, proximity is defined in the characteristics of the connection and not through the geographical location. Any two elements in the network need not be physically within reach, or contrariwise so, for the effectiveness of the network to be achieved. ANT relies on the contributions of the elements to fulfil the network, which gives power to the actors or actants. The strength of ANT emerges from the heterogeneous nature of the human and non-human elements, systems and inscriptions and the careful weaving of fragile links amongst these to establish the network.

An actor-network 'emerges' when, through a key actor, a group of heterogeneous elements comprising both humans and non-humans successfully align to the behest of that key actor (Michael, 2017). Law (1992, p. 386) presents the core proposition of ANT as to how actors societies assemble, activate, contrast and galvanise the components they comprise. It requires that these heterogeneous elements are prevented from voluntary, involuntary and spontaneous redirection towards unpredictability to instead '… for a time cancel the process of translation…' to become what 'passes as a punctualised actor'. It must be noted

that the very process of alignment is also heterogeneous, where the products from the networks profile the environment to be self-sustaining and resist dissolution thereof (Law, 1987). These networks of heterogeneous elements exist exclusively and uniquely according to Latour (1996, p. 50), who argues metaphorically that "… there is no aether in which the networks should be immersed".

The ANT approach fundamentally comprises three main principles being; generalised symmetry, agnosticism and free association (Michael, 2017; Callon, 1986). These principles drive ANT as a philosophy that systematically interviews the actors and actants from the condition that privilege is denied and a priori assumptions are rejected.

First, **generalised symmetry** requires that the disparate elements that comprise the network are equally and non-discriminately analysed using common analytic instruments (Callon, 1986). To accomplish that joint base, ANT utilises a neutral terminology that without prejudice, comprehends the roles of the actants purposely without privileging any actant over another.

Second, **generalised agnosticism** insists that total neutrality is required, and researchers refrain from censorship in the construal by actors of other actors (Callon, 1986) regardless of incongruity. Absolute objectivity to be impartial in the parties entangled in controversy, and the form of analysis is thus equivalently applied to all participants. This contends that all judgement is reserved and that no actor or interpretation is privileged over one other in the analysis process. It must be noted that any suppression could conceivably encumber the appreciation of the phenomena being examined.

Third, **free association** repudiates a priori dissimilarity amongst society, nature and technology, permitting these to assemble towards any multiplicity of amalgamations and permutations to legitimise translations (Callon, 1986). Associations between actors vacillate and freely exist and are not imposed on the actors, and these relationships exist as the focus of the analysis.

A network's formation and maintenance are not entirely dependent on only the primary actor who initiated it in the first instance (Michael, 2017). Instead, as the network evolves and matures, the emphasis and importance of actors will vary, and therefore the precipitating actor is required to employ various management styles. The stability of the 'fact' thus needs to be understood, considering the prevailing circumstances and strategies (Law, 1987). It must be understood that other unrelated actors are also constructing networks, and they attempt to recruit special actors into their own networks toward their own objectives. It must be understood that other unrelated actors are also constructing networks, and they attempt to recruit special actors into their networks toward their objectives. Regardless of the relative social importance of specific actors, the cause and effect enjoy no specific privilege due to the social standing of the actor external over the network.

Michael (2017, p. 35) argues that the "ways in which the filaments of a network are established and maintained" are imperative towards the stability of the network. That entails that the elements that comprise the network need to be positioned towards appropriate use.

The context of the above principles highlights the 'sociology of translation' (Callon, 1986) and follows the establishment and advancement of the actor network, which focuses on enrolling the actors, actants, technologies and communities The focus on heterogeneity promotes the concept of technoscience as privileged over the separation of science and technology as individual and independent meanings (Latour, 1987). Citing Latour (1990), Michael (2017, p. 35) states that: "… this heterogeneity is particularly elaborated for technoscience: insofar as it draws on a much broader array of entities it is especially potent in network building." The concept of technoscience thus effectively captures all the components regardless of their state "… dirty, unexpected or foreign" (Latour, 1987, p. 174).

In the following section, the sociology of translation will be discussed as a key concept that allows for network forming and contributes to the inherent strength of the network.

3.1.2 Sociology of translation

As mentioned earlier, the core concept of ANT exists in the translation process, where the interests of actors that are required to participate in the network become adjusted to coincide with the purpose of the network (Callon, 1986; Latour, 1987). According to Callon (1986, p. 26) “To translate, then, is to oblige an entity to consent to detour”. This entails that the actors' interests become redefined to effectively represent the network purpose and communicate with a common language to represent the undertaking of the primary actor. During this four-point schema of ‘translation’, the key actor intends to recruit all the actants towards co-opting to achieve the desired outcome through membership in the ‘durable network’. Figure 13 presents the process derived from Callon (1986), where the lead actor recruits the actant as a potential member towards the ultimate mobilisation as a punctualised actor.

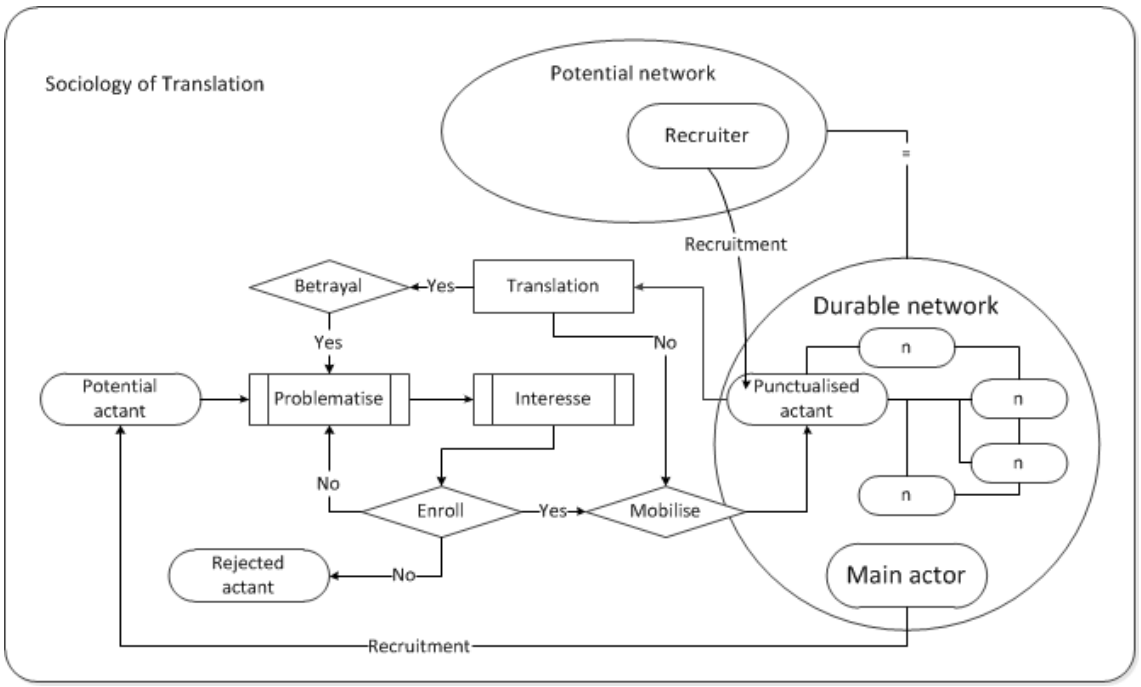

Figure 13 - Sociology of translation

Source: Interpreted and adapted from Callon (1986)

It must be cautioned that actors and actants remain heterogeneous, regardless of their successful translation, and possess attributes that attract principal actors from other networks who may attempt to recruit and translate them towards their

bidding, as previously mentioned. During such interruptions, it is incumbent on the main actor to respond through the renewal of the translation process, resist betrayal and stabilise the actor, failing which, the actor is rejected and replaced.

For translation to become effective, the following four-point schema is presented as the act of ‘stabilisation’ (Callon, 1986).

Problematisation; is the first step towards successful recruitment, the process of determining an actor’s individuality and interests to become redirected (Callon, 1986) where the current interest of the actor prevents him from achieving the satisfactory outcome. The eccentricity of the actor or group of actors is determined, and the heterogeneity is recognised and distributed amongst the actants. This problematisation does not present the final outcome and presents the hypothesis of social expansion.

‘*Interessement’*; the practices through which an actor imposes and confirms a particular individuality on other actors to align them towards the problem to be focussed on (Callon, 1986). This process entails soliciting the ‘problematisation’ and ‘displacement’ of actors as participants to the main actor functioning as an ‘obligatory passage point’. Standardisation of actions and thought is required, processed through ‘persuasion’. The main actor functions as the ‘intermediary’ between the actors to redirect their focus towards the ‘problematised’ identity. The claims of the ‘problematisation’ are tested through the process of ’interessement’ and in ‘centres of calculation’ where the veracity of the ‘problematisation’ is examined. The identities and views of actors are validated through their negotiations with other actors towards convergence of deliberations. In the typical scenario of the ‘problematisation’ discussed, hurdles are anticipated through negotiation actors, changes in regulatory impositions and the discovery of valuable artefacts. The context of ‘interessement’ thus redefines, redirects, cleanses and authenticates the ‘problematisation’.

Enrolment; the instant of confirmation of the effective ‘translation’ of interests of the actors, which were achieved through robust discourses, solicitation and

parleys (Callon, 1986). Designated roles are successfully placed and actors, systems, internal and external parties are equipped to perform within a stable network.

Mobilisation; the final instant where the actors effectively communicate as a singularity and the emergence of the 'spokesperson' (Callon, 1986).

Successful translation of an individual enables that human or non-human actant to scheme and 'organise' outside of the organisation's formal structures to effectively represent the project. Thus, the main actor, or the project manager, needs to be well known and connected within the organisation to be able to draw on informal networks and other formal networks to implement unique initiatives.

3.2 Conclusion

This research project focuses on Actor-Network Theory as the theoretical lens to assist in proposing an interpretive framework with particular emphasis on the Sociology of Translation.

The following can be deduced with regard to Actor-Network Theory;

- The sociology of translation is the core tenet of ANT, to establish durable network environments'
- ANT its own taxonomy of terms that are applied in a specific lexicology.
- The theory uses a flat network design to equally distribute power and prevents misuse of hierarchical misuse.
- These networks comprise participants with equal agency and can comprise humans, non-humans, business systems and processes.
- Successful translation of an individual enables that person or thing to scheme and 'organise' outside of the organisation's formal structures to effectively represent the network.
- The successful translation is then a prerequisite for appointment to the network.

Given the above Precis of ANT, the following deductions were made through parallels drawn to project management, execution and execution structures:

- Similar to ANT, the project execution structures can be viewed as a flat network design to distribute power equally and to prevent misuse of hierarchical misuse.
- Similar to networks in ANT, the project execution structure can comprise participants that have equal agency and can comprise humans, non-humans, business systems and processes.
- Successful translation of an individual enables that person or thing to scheme and ‘organise’ outside of the organisation's formal structures to effectively represent the project.
- The successful translation is then a prerequisite for appointment to the Project.
- The successful translation is then a prerequisite for appointing a project manager in congruence with the project's size, complexity and strategic importance.
- The final steps of enrolment and then mobilisation entail that the project itself can be ‘black boxed’ with determinable inputs and outputs to other projects or become ‘punctualised’ to other projects. In the typical project, all project activities are progressed towards the benefits realisation in its contribution to the social upliftment.

From the above it can thus be concluded that the application of ANT thinking and parlance has a direct application in the management of projects and designing the process of assembling teams in appropriate structures.

Having gained an understanding of the theoretical context and tenets of ANT, the following sections and discussions will relate to the applicability of the tenets to the observed phenomenon and business context of project execution. Considering the deductions that were reached during the study of the ANT concept, and relating them to the aims and objectives of the research, it can be concluded that ANT is a theory that explains the ‘workings’ amongst and between material-semiotic actants. It is submitted that ANT is relevant to understanding

the disharmony between the two organisation forms, which are discussed in section 2.5.1.

This section focused attention on reaching an understanding of the ANT theory. Pertaining to the aim and objectives of the research, ANT perspective be investigated as it pertains to development for the understanding of:

- Causes of disharmony.
- Remedies to the disharmony.
- Rectifying of the causal factors contributing to disharmony.

This chapter concludes that the Actor Network Theory's Sociology of Translation is a relevant perspective to apply to the study of disharmony and thus, the business context where two organisation forms that contemporaneously co-exist within organisations when projects are executed.

Chapter 4 Research design

The observation of a specific phenomenon within a given context leads to the formalisation of a research problem for phenomenon-driven research, according to Schwarz & Stensaker (2016). Accordingly, an appropriate strategy is selected and in the following sections, the specifics of ethnography as choice of research strategy are discussed.

The writings of (Schultze, 2000), Wolcott (1999), Latour (2007), Anfara Jr (2008), Bhaskar (2008), Law (2009), Sayer (2010), Saunders, Lewis, and Thornhill (2012), Creswell (2013), Creswell (2014) and Gobo and Molle (2017) informs the selection of approach and methodology for the research design.

4.1 Research approach

The setting for this research is rooted in the study of people within their culture, which suggested from the onset that this qualitative research would draw on an ethnographic constructivist approach. Rich contextual discussions, augmented with explanatory diagrams and illustrations are utilised throughout. Narrative metaphors give context and understanding to present the findings and historical recounts (Crotty, 1998; Wolcott, 1999) (Schultze, 2000).

4.2 Worldview and philosophical assumptions

Creswell (2013) states that; *Philosophy* means using concepts and dogmas that enlighten the scholar's research. Accordingly, and inadvertently, researchers make philosophical assumptions during the research process. These assumptions lead to beliefs that are influenced by; the researcher's training, exploration of the literature, experience, exposure to the research fraternity and advice from mentors (Huff, 2009). The importance of philosophy is emphasised when these assumptions and beliefs guide the researcher through understanding the research problem (Huff, 2009), deciding on an approach to the research (Saunders, Lewis, & Thornhill, 2012), deciding upon the research questions, to

establish the research methods, and to acquire the answers to the research questions.

The philosophical approach to this research is selected following definitions of Creswell's (2014) four *worldviews* in Table 17, being; Guba (1990, p. 17) "…a basic set of beliefs that guide action", *paradigms* (Lincoln, Lynham, & Guba, 2011), *epistemologies* and finally, *ontologies* (Crotty, 1998) that enlighten the scholar's research and assumptions and beliefs through understanding the research problem (Huff, 2009).

Table 17 - Four worldviews

Post-positivism Determination Reductionism Empirical observation & measurement Theory verification		**Constructivism** Understanding Multiple participant meanings Social & historical construction Theory generation
	Four Worldviews	
Transformative Political Power & justice oriented Collaborative Change oriented		**Pragmatism** Consequence of actions Problem centred Pluralistic Real-world practice oriented

Source: Derived from Creswell (2014)

Creswell suggests in Table 17 above that a researcher has a choice from 4 main worldviews. Gaining a deeper level of understanding about Creswell's suggestion brought about that any particular worldview is supported by certain tenets, as discussed below.

Creswell (2013) then suggests that these tenets are about the:

- *ontology*, which represents the form and physiognomies of the reality.
- *epistemology* which represents how the entitlements of knowledge are vindicated.
- *axiology* which represents the researcher's values and ethics.

Furthering Creswell's tenets, Saunders, Lewis, and Thornhill (2012) add *methodology* representing the researcher's data collection and interpretation approach.

It is, therefore, evident that these sets of tenets guide the researcher's decisions towards the adopted approach to the research, and the process for the research. Collectively, Table 18 outlines the relationships for interpretive frameworks between Post-positivism, Social Constructivism, Transformative/Postmodern, and Pragmatism to guide the researcher in defining and sculpting the research.

Table 18 - Interpretive frameworks and associated philosophical beliefs

Interpretive Frameworks	Ontological Beliefs	Epistemological Beliefs	Axiological Beliefs	Methodological Beliefs
Post-positivism	The existence of single realities external to oneself.	Approximation of reality, constructed through research and statistics. Limited interaction with others. Validation from peers, not participants.	The researcher's biases need to be controlled and not expressed in a study.	Use of scientific method of writing. Objective of research is to create new knowledge. Method is important. Deductive methods are important, such as testing of theories, specifying important variables and making comparisons amongst groups.
Social Constructivism	The construction of multiple realities through own experience and interactions with others.	Co-construction of reality, shaped by individual experiences.	Individual values are honoured, and are negotiated amongst individuals.	More of a literary style of writing is used. Use an inductive method of emergent ideas (through consensus) obtained through methods such as interviewing, observing and analysing texts.
Transformative / Postmodern	Participation between researcher and communities/ individuals under study.	Co-created findings with multiple ways of knowing.	Respect for indigenous values; values need to be prioritised and interrogated.	Use of collaborative research process; political participation encouraged, questioning methods; highlighting issues and concerns.
Pragmatism	Reality is what is useful, is practical and 'works'.	Reality is known through many research tools that reflect both deductive (objective) and inductive (subjective) evidence.	Values are discussed because of the way that knowledge reflects both the researchers' and participants' views.	The research process involves qualitative and quantitative data collection and analysis approaches.

Source: Adapted from Creswell (2013)

Concerning Table 18 above, guidance was taken in the design of what has to follow from Social Constructivism at the broadest sense.

Further clarification regarding this worldview is required. In accordance with Clark's view (2008), wider knowledge is recognised, where reality exists independent of the view held by humans. The ontological view for this study is that multiple realities exist within which an epistemology needs to be co-constructed with the participants, and an appropriate lens is required to approach

the topic. In accordance with the nature of the area under study and the guidance of Creswell (2013; 2014) in Table 17 and Table 18, a retroductive constructivist (logical inference) framework is adopted for this research.

4.2.1 Critical realist ontological stance

It was discussed that project managers exhibit unique behaviours while participating within a unique community. Whilst acting 'uniquely' they continually interact with their permanent organisation compatriots, who then form perceptions of those 'distinctive' people, subject to the situation prevailing at the time.

Similarly, the unique behaviours of the project management community, whilst interacting with their permanent organisation compatriots, suggest that the perceptions of those resources would vary independently, subject to the situation prevailing at the time. It is thus accepted that multiple realities may exist for those participants in the study (Creswell, 2013) and, subjectively, that the reality may be independent of one's own perception (Van De Ven, 2007). Denzin and Lincoln (2000) propose that qualitative researchers stress the socially fashioned nature of reality, where meaning is derived from how social experience is created (Creswell, 2013; Berger & Luckmann, 1967; Lincoln & Guba, 1985). Saunders, Lewis and Thornhill (2012) state that people create social occurrences through their observations and engagements, from which subjective meaning is derived, leading to the search for complexity instead of a narrowly defined meaning of ideas. Clark (2008) argues that in the process to resolve organisational dynamics, it must be accepted that there exists a descriptive and wider knowledge beyond the observed reality, and an intricacy that requires explaining to humans.

Correspondingly, with the nature of project management as continuously modernising conduct and its impact on the permanent organisation form, the ontological understanding of the state of affairs is that the environment is a changing and non-static reality, and, an underlying philosophy that informs the nature of the phenomenon is required (Van De Ven, 2007). This philosophy

suggests that the current situation must be understood from causal perspective of ‘what must exist for this to be?’

Accordingly, Critical Realism was selected, also referred to as transcendental or complex realism (Bhaskar, 2008), as the ontological approach to the research. The stratified ontology of critical realism theorises reality and directs empirical work in research of natural and human sciences (Sayer, 2010). In congruence with the above, the literature proposes that reality is understood as complex where both agency and mechanistic factors influence human behaviour.

The key tenet of critical realism is in its facility to support research initiatives towards uncovering complicatedness through its explanatory style, and reconciliation of authority and mechanistic factors. Understanding of reality is core to the concept with methodological verdicts being of secondary importance. Critical realism emphasises that humans fashion and change the social, while accepting that non-human mechanisms play an important role in social phenomena. Therefore, this stratified ontological stance ideally supports a theoretical lens that coincides with the context of all actors (human and non-human) possessing agency towards actions and outcomes.

Bhaskar (2008) presents his stratified ontological approach comprising three distinct realms of reality being; actual, real and empirical. See Table 19.

Table 19- Bhaskar's stratified ontology

Realm	Real	Actual	Empirical
Mechanisms	X		
Events	X	X	
Experiences	X	X	X

Source: Bhaskar (2008)

Clark (2008) summarises Bhaskar’s stratified ontology as follows:

> In the Real domain; there exist factors (mechanisms) with latent or potential properties that may be benign whilst dormant, but could emerge and co-opt relations and structures towards changing the actual realm during favourable

conditions. These mechanisms comprise social, natural and material semiotic elements which exist independent of human knowledge or perception.

The Actual domain, within the social and responding to immobile, arbitrary, unpredictable and irregularly composed circumstances, the mechanisms in the Real domain become mobilised, resulting in phenomena leading to unique events that impact the communal statuses. The Actual domain comprises the immediately observed reality, the occurrences (events) and consequences (experiences) in the perceptible reality.

The Empirical domain refers to the human perception of the Actual and Real domains. This domain emphasises that causality is understood and that acts and outcomes are explained.

Furthering Bhaskar's views, Sayer (2010, pp. 3-4) presents eight significant norms from a critical realist perspective:

"The world exists independently of our knowledge of it.

Our knowledge of that world is fallible and theory-laden and, concepts of truth and falsity fail to provide a coherent view of the relationship between knowledge and its object. Nevertheless, knowledge is not immune to empirical checks, and its effectiveness in informing and explaining successful material practice is not a mere accident.

Knowledge develops neither wholly continuously, as the steady accumulation of facts within a stable conceptual framework, nor wholly discontinuously, through simultaneous and universal concept changes.

There is necessity in the world; objects - whether natural or social -necessarily have particular causal powers or ways of acting and particular susceptibilities.

The world is differentiated and stratified, consisting not only of events but also objects, including structures, which have powers and liabilities capable of generating events. These structures may be present even where, as in the social world and much of the natural world, they do not generate regular patterns of events.

Social phenomena such as actions, texts and institutions are concept dependent. We, therefore, have to explain their production and material effects and understand, read or interpret what they mean. Although they have to be interpreted by starting from the researcher's own frames of meaning, they exist regardless of researchers' interpretations of them. A qualified version of 1 therefore still applies to the social world. In view of 4–6, social science and natural science methods have differences and similarities.

Science or the production of any other kind of knowledge is a social practice. For better or worse (not just worse) the conditions and social relations of knowledge production influence its content. Knowledge is also largely—though not exclusively—linguistic, and the nature of language and the way we communicate are not incidental to what is known and communicated. Awareness of these relationships is vital in evaluating knowledge.

Social science must be critical of its object. In order to be able to explain and understand social phenomena we have to evaluate them critically. Amplifications of these points could fill many books but the list should provide some orientation."

The ontology of critical realism theorises reality and directs empirical work in research of natural and human sciences (Sayer, 2010). In congruence with the above, the literature proposes that reality is understood as complex where both agency and mechanistic factors influence human behaviour. Accordingly, the ontological tenet to follow for the research was indicated to be that of critical realism, also referred to as transcendental or complex realism (Bhaskar, 2008), as the ontological approach to the research.

Having formulated the ontological stance for the research to follow, the epistemological stance accordingly received attention, such of which is elaborated upon below.

4.2.2 Critical realist epistemological stance

In determining the epistemological stance, a few aspects, stated as deductions from the discourse thus far, must be made. In this approach, the point of departure was adopted following formulated and formal posit that; the integration of the business methodologies of the permanent organisation with the project management methodologies of the temporary organisation and with the disharmony amongst the actors, is patently ineffective, due to the unpredictability of the behaviours of the temporary organisation. It is apparent that the project management world in the permanent organisation is not entirely random, yet neither does a complete stasis exist.

As previously stated, for research settings where a directly measurable environment exists, there is an absence of a clear set of data and the resulting rejection of a traditional *deductive statistical* explanation, proposes that an *inductive approach* is followed.

This *epistemological stance* is guided by the ontological stance and the continuum of constant tension that project management as the temporary organisation imposes on the permanent organisation (Turner & Mueller, 2003), which suggests a transient and self-organising response in both organisation types. The researcher believes that disharmony arises due to self-correcting events not being synchronised. An understanding of the cultures and behaviour patterns in the organisation (Bhaskar, 2008) thus needs to be explored where there is not a predefined or predestined methodology or criteria to test the veracity of our knowledge (Van De Ven, 2007), and it is anticipated that a logical path emerges from notion as opposed to inheritance from existing fact or theory.

To further distinguish the phenomenon, physical observations of the environment and enquiries need to be directed at the participants to deliver the data from which the learning about the environment is established. In response to the ontological uncertainty, the reality was required to be epistemologically co-constructed with the participants (Creswell, 2013) and by examining inscriptions, systems and processes. This was fashioned through the accounts of the personal experiences

of the individuals (Denzin & Lincoln, 2000) and observations of the networks, impacts, influences and actions of human and non-human materials and things (Latour, 2007). The knowledge of the realm that emerges is thus evident through the subjective experiences of the actors (Saunders, Lewis, & Thornhill, 2012).

In consideration of the above, the epistemological stance for the research can be stated as being that of critical realism.

Having determined the ontological and epistemological stance, determination of the axiological stance required attention. This will be discussed in the section below.

4.2.3 Axiological stance

According to Creswell (2014), the researcher must be intensely involved in a persistent and wide-ranging experience with the subject under study. Conventionally, the researcher is permitted access to the research area, and the appropriate sanctions are acquired through written confirmation. Creswell suggests that the following are important considerations in terms of the researcher's role;

- That the researcher informs the participants of the research problem and past understanding.
- Explicit information regarding the researcher's interpretation of data as a result of familiarity with the subject to avoid personal biases.
- Associations between the researcher and contributors need to be clarified to alleviate compromises that may impact the researcher's interpretations.
- Actions undertaken to gain permissions from the relative authorities to protect the rights of the participants.
- Actions undertaken to secure access to the research setting and ensure the required authorisation to undertake the study.
- Delicate matters that may become apparent.

According to Creswell (2013) the researcher must respect the values of the individuals in the study and inform participants accordingly of the researcher's own values. The co-constructionist nature of the researcher's presence in the research setting requires a participatory orientation (Anfara Jr, 2008) where the researcher is immersed in the research (Creswell, 2013) and a participant in the study. Accordingly, the researcher needs to be 'positioned' in the study and *per se* give account of his or her own values and biases and the information collected.

As discussed earlier, the researcher is deeply immersed in business and project management, and the management of these practices by others. To that effect and to conduct the study in the research setting, those participants were informed of the researcher's presence and practices in the field, and the researcher gave account of own experiences to add to the data and the interpretation thereof.

In concluding sections 4.2.1, 4.2.2 and 4.2.3 above, it can be stated that critical realism suited the nature of the research the best, and was subsequently chosen to form the paradigm and setting against which the study took place.

4.3 The design

The research design commonly outlines the plan for the study and is pursuant to Creswell's (2013) argument that common process for research exists, it includes the problem, questions, approach, strategy, data collection, results and the discussion. According to Creswell (2013), Morse and Richards (2002) explicate the concept of '*methodological congruence*' in research, where the purposes, questions and methods interrelate to implement a consistent study as opposed to disjointed components.

Creswell (2014) submits that the research approach involves philosophical assumptions and distinct methods or procedures. This comprises a general metaphysical positioning by the researcher; resulting from past experience, influences by others and own learning. These beliefs held by researchers guide the approach to adopting the appropriate approach, be it quantitative, qualitative or mixed methods, see Table 20.

Table 20 - Research approaches

Research approaches Quantitative, Qualitative and Mixed methods		
Philosophical worldviews	**Designs**	**Research methods**
Post-positivist Constructivist Transformative Pragmatic	Quantitative (Experiments…) Qualitative (Ethnographies…) Mixed methods (Explanatory sequential…)	Question Data collection Data analysis Interpretation Validation

Source: Creswell (2014)

Table 21 compares the aspects of the Quantitative and Qualitative research approaches. It can be deduced that quantitative approaches seek to confirm absolute existence and statement of problems, qualitative approaches seek to define meaning and theories of problems.

Table 21 - Aspects of quantitative and qualitative research approaches

Qualitative Approach	Quantitative Approach
Researchers follow inductive style, focus on individual meaning and importance of exposing the complexity of a problem Exploring and understanding the meaning that individuals ascribe to a social or human problem Questions and procedures emerge and collect data in participant's setting Data analysis inductively progresses from particulars to general themes and interpretations by the researcher Flexible structure of final report	Researchers have assumptions on testing theories and follow a deductive style, protect against bias, control for alternatives and are able to generalise and replicate findings Testing objective theories, by examining relationships amongst variables Numbered data analysis statistically by numbers Set structure of final report

Source: Creswell (2014)

In defining and sculpting the research, the design is founded on the researcher's ontological, epistemological and axiological stance firstly, where the nature of the reality is comprehended, secondly, where an approach to explore the phenomenon can be conceived and thirdly, the locus and focus of the researcher in the research setting. The philosophical stance in relation to the reality proposes a qualitative approach to the research.

In accordance with the philosophical assumptions, the approach to the research is required to be further focussed. Qualitative research is divided into more detailed approaches, and a variety of options exist to assist the researcher in relation to the discipline within which the research is undertaken. Creswell (2013)

states that the approach to a qualitative enquiry must be clearly identified for it to be presented as a sophisticated study and enable reviewers to assess it. Creswell (2013) further proposes that the academia has not agreed structures for the design of qualitative study, and that the literature varies in its suggestions. Accordingly, see Table 22, there is a bewildering and diverse number of choices, by several authors, for the researcher to select.

Table 22 - Qualitative approaches

Authors	Qualitative Approaches	Disciplines/Fields
Jacob (1987)	Ecological Psychology, Holistic Ethnography, Cognitive Anthropology, Ethnography of Communication, Symbolic Interactionism	Education
Lancy (1993)	Anthropological Perspectives, Sociological Perspectives. Biological Perspectives, Case Studies, Personal Accounts, Cognitive Studies, Historical Enquiries	Education
Marshall and Rossman (2010)	Ethnographic Approaches, Phenomenological Approaches, Sociolinguistic Approaches	Education
Munhall and Oiler (1986)	Phenomenology, Grounded Theory, Ethnography' Historical Research	Nursing
Morse (1994)	Phenomenology, Ethnography, Ethnoscience, Grounded Theory	Nursing
Strauss and Corbin (1990)	Grounded Theory, Ethnography, Phenomenology, Life Histories, Conversational Analysis	Sociology, Nursing
Moustakas (1994)	Ethnography, Grounded Theory,. Hermeneutics, Empirical Phenomenological Research, Heuristic Research, Transcendental Phenomenology	Psychology
Slife and Williams (1995)	Categories of Qualitative Methods: Ethnography, Phenomenology; Studies of Artefacts	Psychology
Denzin and Lincoln (1994)	Case Studies, Ethnography, Phenomenology, Ethnomethodology, Interpretative Practices, Grounded Theory, Biographical, Historical, Clinical Research	Social Sciences
Denzin and Lincoln (2005)	Performance, Critical and Public: Ethnography, Interpretive Practices, Case Studies, Grounded Theory, Life History, Narrative Authority, Participatory/Action Research, Clinical Research	Social Sciences
Miles and Huberman (1994)	Approaches to Qualitative Data Analysis: Interpretivism, Social Anthropology, Collaborative Social Research	Social Sciences

Source: Creswell (2013)

Creswell (2013) seeks to further clarify the approaches available by underlining five approaches to qualitative research, which are;

- Narrative research.
- Phenomenological research.
- Grounded theory research.

- Ethnographic research.
- Case study research.

The five approaches are summarised in Table 23 and their applicability to research are emphasised. From that, a pattern emerges that aligns one or more approaches that provide the researcher with the means to address the research problem.

Table 23 - Contrasting characteristics of the five qualitative approaches

Characteristics	Narrative	Phenomenology	Grounded Theory	Ethnography	Case Study
Focus	Exploring the life of an individual	Understanding the essence of the experience	Developing the theory grouped in data from the field	Describing and interpreting a culture sharing group	Developing an in-depth description and analysis of a case or multiple cases
Type of problem best suited for design	Needing to tell stories of individual experiences	Needing to describe the essence of a lived phenomenon	Grounding a theory in the view of participants	Describing and interpreting the shared patterns of culture of a group	Providing an in depth understanding of a case or cases
Discipline background	Drawing from the humanities including anthropology, literature, history, psychology and sociology	Drawing from philosophy, psychology and education	Drawing from sociology	Drawing from anthropology and sociology	Drawing from psychology, law, political science and medicine
Unit of analysis	Studying one or more individuals	Studying several individuals who have shared the same experience	Studying a process, and action or an interaction that shares the same culture	Studying a group that shares the same culture	Studying an event, a program, an activity, or more than one individual
Data collection forms	Using primarily interviews and documents	Using primarily interviews with individuals, although documents, observations and art may also be considered	Using primarily interviews with 20 – 60 individuals	Using primarily observations and interviews, but perhaps collecting other sources during extended time in field	Using multiple sources, such as interviews, observations, documents and artefacts
Data analysis strategies	Analysing data for stories, 'restorying' stories, and developing themes, often using a chronology	Analysing data for significant statement. Meaning units, textual and structural description, and description of the essence	Analysing data through open coding, axial coding and selective coding	Analysing data through description of the culture sharing group and theme about the group	Analysing data through description of the case and themes of the case as well as cross tables
Written report	Developing narrative about the stories of an individual's life	Describing the essence of the experience	Generating a theory illustrated in a figure	Describing how a culture sharing group works	Developing a detailed analysis of one or more cases

Characteristics	Narrative	Phenomenology	Grounded Theory	Ethnography	Case Study
General Structure of the study	Introduction, (problem, questions) Research procedures (a narrative, significance of individual, data collection, analysis, outcomes) Report of stories Individuals theorise about their lives Narrative segments identified Patterns of meaning identified (events, processes), epiphanies, themes) Summary (Adapted from Denzin, 1989a, 1986b)	Introduction, (problem, questions) Research procedures (a phenomenology and philosophical assumptions, data collection, analysis outcomes) Significant statements Meaning of statements Themes of meanings Exhaustive description of phenomenon (adapted from Moustakas, 1994)	Introduction, (problem, questions) Research procedures (grounded theory, data collection, analysis, outcomes) Open coding Axial coding Selective coding and theoretical propositions and models Discussion 0f theory and contrasts with extended literature (adapted from Strauss and Corbin 1990)	Introduction, (problem, questions) Research procedures (ethnography, data collection, analysis, outcomes) Description of culture Analysis of cultural themes Interpretation, lessons learned, questions raised (adapted from Wolcott 1994b)	Entry vignette Introduction, (problem, questions, case study, data collection, analysis, outcomes) Description of the case(s) and context Development of issues Detail about selected issues Assertions Closing vignette (adapted from Stake, 1995)

Source: Creswell (2013)

In order to select an appropriate strategy, Creswell (2013) proposes six important considerations for each approach;

- The background to the approach.
- Significant characteristics that are dominant in the available approaches.
- The various forms that a study can take within the respective approaches.
- The techniques to be used within the approaches.
- Challenges.
- Likenesses and distinctions amongst the approaches.

The responses to these six queries inform the selection of an appropriate approach. In relation to Table 22, it is suggested that the area of concern as indicated in the problem statement, relates the qualitative paradigm most closely to the social sciences reality.

4.3.1 Ethnography as the research strategy

Considering Creswell's approaches summarised in Table 23 in relation to the problem as stated, the strategy adopted is as follows.

It is recognised that business environments, including those permanent and temporary forms, comprise people and groups with unique cultures. It is further accepted that researchers, project managers and business managers are people, and drawn on the researcher's own experiences, a business manager and a project manager to explore those actual practices that they perform as workers (Schultze, 2000).

This research studies people in action (Rees, Holloway, & Gatenby, 2014) and it seeks to uncover their practices, things they do as opposed to their fundamental knowledge and fixed business processes. It is accepted that their fundamental knowledge is what enables them to perform those practices, but it is endeavoured to uncover the causes for the posited phenomena from a perspective of what they truly do as opposed to what they should be doing or what they say they should be doing (Pickering, 1992).

In Table 23 Creswell (2013) states that ethnography is ideally suited to "Describe and interpreting the shared patterns of culture of a group". Lichterman (2017, p. 35) argues that "… relatively few sociological ethnographers join a reflexive voice to the analytic narrative throughout a study". This study and being an active participant in both organisation forms require that the ethnographer personally reflect on the events instead of being a distant observer. Drawing further on the ontological-, epistemological and axiological stance, an ethnographic enquiry was adopted which is reflexive in nature to explore the general landscape of the environment and its participative culture. Observation and participation as the method of exploring the actors' culture in the permanent and temporary organisation forms, was anticipated to reveal the undocumented work behaviour of the actors in the two organisation forms. The work culture to be explored was the mutualism and disharmony between the players in the two organisations; thus, the routine in which the permanent and the temporary organisation accomplish the business objectives through the actions of its people.

4.3.2 Ethnography

According to Atkinson & Hammersley (2007) the term *ethnography* is an anthropological research approach to research environments with which the researcher is not familiar. Commencing during the early twentieth century, and since then, ethnographic fieldwork became the adopted means for anthropological study. Atkinson and Hammersley (2007) describe the progress of ethnology as a research approach through the period, which embraced sociology and sub-disciplines, psychology, and human geography. The maturity of ethnology into its current state (Creswell, 2013), discarded convention and led to pluralistic approaches. To conduct an ethnographic study, the researcher is required to be immersed in the culture-sharing group, while observing and interviewing the participants (Creswell, 2013; Gobo & Molle, 2017). Wolcott (1999) suggests that during an ethnographic study the researcher is required to understand the kinds of data to be collected, what analysis tools to use and the meaning of interpretation of the cultures under study.

Rees, Holloway and Gatenby (2014) argue that for ethnography to be effective in social research, it requires an ontological, epistemological and methodological foundation that extends beyond subjectivism. The authors submit that critical realism ideally positions individuals within the structures within which they are located. A construct is then required to support the ethnographic strategy, exploring the observed phenomena through experiences of people that are grounded on tangible events, and where these events occur in response to a relational coincidence of heterogenic material semiotic elements (Bhaskar, 2008).

Creswell (2013) proposes that an ethnographic study explores the social behaviours of a culture-sharing group, but it does not specifically seek to advance and in-depth comprehension of a single issue. The research actions of recounting, evaluating and reasoning are not distinctive to ethnography only, as they are critical facets to all forms of qualitative research (Wolcott, 1999). Following the complexity in the historical development, a standard, well-defined meaning is not evident, according to Atkinson and Hammersley (2007). It can be

deduced that it is only through the descriptions and actions of ethnographers that a core definition of ethnography can emerge and accordingly, the general features of ethnography are;

- The study of the actions of people in daily context, as opposed to conditions imposed by the researcher.
- Data collection from various sources which includes observation, documentation and unstructured conversations.
- Moderately unstructured data collection where the design is not fixed and detailed, and categories are not predetermined but rather emerge from data analysis.
- In-depth study is facilitated by limiting the analysis unit to a single setting or a group of people.
- Data analysis involves the contexts that arise through the interpretations of the behaviours of human actions and institutional practices, which produces descriptions, reasoning and theories.

Creswell (2013) further supports this opinion and suggests that in an ethnographic enquiry, the researcher studies the behaviours, language, interactions and values of a culture-sharing group. The general characteristics of ethnographies, following a review of a variety of publications, are summarised as follows;

- Construct a complex and comprehensive culture of an identifiable group, which may be the entire group or a subset thereof, through the study of their collective conducts.
- Emerging patterns are observed in social organising and mutual behaviour.
- The group under study is integral to ensure enough time for normalisation and for distinct working patterns to emerge.
- Theory is emphasised in the researcher's assumptions where the research is undertaken with an open anticipation of what to find.
- Applying theory and extensive fieldwork that includes interviews and observations, to search for emerging patterns in the data.

- Analyse the data by quoting the participants (emic perspective) and then integrate the data through an etic perspective to develop an overall social construal of the area under study.

As stated in the research questions / sub-questions, a single issue is examined: the disharmony between temporary and permanent organising with the credibility that the utility and the subsidiary are representatives of the area under study. The investigation is therefore undertaken within the utility's project management and support environments.

Rees, Holloway, and Gatenby (2014) argue that for ethnography to be effective in social research, it requires an ontological, epistemological and methodological foundation that extends beyond subjectivism. The authors submit that critical realism ideally positions individuals inside the structures within which they are located. The construct should be grounded on tangible events and these events should occur in response to a relational coincidence of heterogenic material semiotic elements (Bhaskar, 2008).

4.4 Data handling

A qualitative approach has already been established. Creswell (2014) informs that during a qualitative enquiry the collection of data, interpretation and analysis differ from quantitative methods. Thus, it can be concluded that qualitative enquiry is informed through directed sampling, assembling open data, analysing artefacts, presenting material in tables and figures, and personal understandings. The researcher applies an inductive approach using the lowest levels of abstraction to build new theory (Creswell, 2013).

Expanding on his view, Creswell (2014, p. 4) states that "Qualitative research is an approach for exploring and understanding the meaning individuals or groups ascribe to a social or human problem." The sensitivities of the individuals under study need to be considered in relation to the impact that the research has on the people and the environment being observed. Recounting the narratives is

fashioned in a literary manner, which may confront researchers accustomed to scientific authoring styles (Creswell, 2013).

Following onto the description above and the fact that the data is collected in the natural environment, unconstrained by simulated influences, the ethnographic study is therefore at liberty to reveal the true nature of the area under study. Therefore, the researcher cannot be a distant observer who is required to be immersed in the field of research (Atkinson & Hammersley, 2007), and, by judging the extent of involvement, adopt a spontaneous and less reserved approach to the research setting. Access to the field and the participants cannot be assumed to be granted routinely, and appropriate authorisation is vital.

With the above contextualisation of an ethnographic study, and its particular peculiarities as it pertains to data handling, the process of such data handling in terms of sources, collection and analysis and interpretation received attention. This is discussed in the section below.

4.4.1 Sources of data

In considering the appropriate approach to follow for the research design, it was deemed necessary to consider the sources of data that could be consulted to accomplish the research aim. The data was partly collected from reflecting over a longitudinal period spanning 35 years as background to the study, 6 years for the literature sources and 18 months as the “lived in” experience.

As such the following sources of data were identified.

- Data from a personal nature: this data source is directly related to the auto ethnographical nature of the study spanning the researcher’s entire career.
- The literature as a source of data: the stated research questions and sub-questions influenced the broader area within which literature searches and sources were identified, including relevant internet sources and relevant academic journals and publications.

- Data was also collected from observations within the research setting and discussions with people within and outside the research setting.

4.4.1.1 Data from a personal nature

As a practitioner researcher, field notes were collected and observations as a participant (Bogdan & Biklen, 2007), through personal active involvement in project execution and implementing best practices since the approval of the study in 2014. Attendance of business meetings and interactions with the practicing community were anticipated to reveal cultural behaviours and conformances to business practices. A journal was maintained throughout the study, utilising personal notes and Microsoft Office, recording events coordinated with the interview transcriptions and data coding.

In addition to the observations during the study period, personal historical experiences were recounted as a professional practitioner over thirty-five years, dating back to the early 1980s. The organisation forms of both the utility and its subsidiary were noted, as were the roles of the members of both organisation types. Data within the utility was collected since the study's inception in 2014, with observations of the environment, behaviours of project teams, business systems and documentation. A series of interviews were conducted over a period of four months following the guidelines of Creswell (2014) and Wolcott (1999) through one-on-one semi-structured interviews. Wolcott further suggests that interviews are open ended by nature, which encourages the shaping of the interview as it progresses.

As mentioned, data was further collected through observations of non-human business systems and artefacts with agency in the network, which was explored and recorded through maintaining a journal of field notes. Field notes are an important extension of the data collection in relation to the researcher's involvement and reflection on the data (Law, 2002; Latour, 2007; Bogdan & Biklen, 2007). All data from observations, field notes and interviews were recorded electronically and maintained, following the guidelines of Bogdan and Biklen (2007) and were properly indexed and safely stored on computer.

4.4.1.2 The literature as a source of data

A literature review was conducted to collect background data to understand complexities surrounding failures in project execution, project management maturity, and the context of the disharmonies. Cited works and references were consulted up to the point of data saturation and span 101 years, with the oldest item originating from 1917 and the most recent scholarly source written in 2019.

4.4.1.3 Personal interviews

As an ethnographic strategy, this research entails the researcher being immersed in the research setting and participating in the daily routines. This also enquires that the conversations are reflected on with fellow actors in the research setting and thus several interviews were conducted to collaborate observations.

Following the guidelines of Creswell (2014), for purposes of data collection through interviews, the research setting and the participants were purposefully selected, to best facilitate the researcher's understanding of the problem under study and, contrary to quantitative research, the purposeful selection rejects random sampling. The selection of the sample is influenced by four important aspects; the correlation of the research setting, the participants, behaviours of the participants and the continuum of variation by the participants within the research setting (Miles & Huberman, 1994).

It is required that adequacy of the sample is related to the researcher's undertaking of the breadth and diversity of the participants in the research setting (Glaser & Strauss, 1967). It was thus required that respondents were carefully stratified from a representative sample in the research setting, as 'those who would best know'. Gobo and Molle (2017) argue that snowball sampling effectively hand-selects individuals who possess the required properties to interview and then, soliciting recommendations from them to identify others that could contribute to the data collection process. Additional people within the local setting were approached for interviews.

The unit of analysis in developing the ethnographic report comprised a stratified sample per Table 24 below. Interviewees comprise of eight key participants in both organisation forms; those immersed in projects and those providing business infrastructure. The people observed in the study comprised senior management as decision-makers, who instructed the development of the projects, key members of the teams who are performing the front-loading of the projects, active senior members of the implementation teams and members in the organisational support structures across the various business disciplines. For purpose of validity, inputs from professionals within the researcher's personal network were considered, who practised project management and general management in large corporations and small businesses.

Table 24 – Research sample in the setting

Title	Organisation	Discipline
Senior Manager, Middle Manager, Manager, Officer	Permanent	General Management, Financial Management, Procurements Management, Human Capital Management, Information Management, Portfolio Management
	Temporary	Portfolio Management, Programme Management, Project Management

Source: Author

At each interview, the participant was requested to identify further potential contributors. The data collection process was executed iteratively up until data saturation, and no new categories emerged. Only then the interview process was concluded.

During participation, the observations and interviews, self-awareness was maintained throughout. It was sought to understand the social reality through the exploration of the participants' own knowledge, views, comprehension, practices and collaborations in relation to the research questions. This was augmented by personal career experiences and utilised for further validation of evidence.

Guest, MacQueen and Namey (2012) anticipate that the dense and rich nature of the data collected may be in excess of the requirement and the data will be stratified, discarding some and retaining other parts to remain focussed on the study topic. One-on-one interviews with participants were scheduled to be

approximately 45 minutes comprising and introduction, research undertaking, anticipated value added by the participant, assurance of anonymity and freedom to withdraw and value of the research. These discussions often expanded beyond the anticipated time, and usually at the will of the interviewee.

Introductory questions were asked to augment the exploratory questions, the latter directly related to the posit of disharmony. The introductory questions were designed to confirm the participants' role in the organisation, and, that the participant understands the organisation forms and the issues under investigation. The exploratory questions were designed to specifically address the research problem, to augment the information gained during observations, documentations and the researcher's own experiences, and the questions are stated as follows;

- Is there a perception of a disharmony between the temporary and permanent organisation forms?
- What is the nature of this disharmony between the temporary execution structure and the permanent execution structure - project versus production?
- How does the disharmony between the temporary and permanent structures in organisations obstruct the interdependence between these two environments, during the implementation of unique initiatives?
- What are the elements of improvement required to address the disharmony?

All interviews were recorded electronically and cross-referenced to the interview diary. The data was held in duplicate electronic computer drives, at separate locations. Data files were named in accordance with relevance, with date and time data to maintain revision. A coherent file directory structure was maintained, named in accordance with data types. Voice-recorded data, transcriptions and observations were cross-referenced. Printed hard copies of the transcriptions, field notes and journals were stored in a secure location. The raw data (Patton, 1987) of recorded interviews was transcribed verbatim (Bogdan & Biklen, 2007)

to ensure completeness of the information. Accordingly, the transcript was edited and organised, cognisant of the computerised data analysis application.

Computer technology was extensively utilised, to ensure access to information and consistency in data collection and handling. Matching technologies were synchronised between mobile phone, tablet and laptop computer. Journals were maintained utilising Mendeley, where possible books were purchased and kept on Kindle, Google eBooks, and iBook. The NVivo CAQDAS software suite was utilised in conjunction with Microsoft Excel to locate and annotate the findings in the primary data, to weigh and evaluate the importance, and to assist in visualising the relations.

4.4.2 Data analysis and interpretation

The data collected needed to be decomposed systematically and re-assembled to provide the required insight into the subject under study (Creswell, 2014).

Interviews were accompanied by observations, field notes and preliminary structuring of the final report. The data collected was anticipated to be dense and rich. For purposes of coding and analysis, Creswell (2013) suggests that data is grouped into themes, suggesting five to seven elements, and proposes a three-step sequential procedure to perform data analysis and validation, per Table 25.

Table 25 - Steps in data analysis

Steps	Actions
Organise and prepare the data for analysis	Transcribe interviews, scanning materials, collating field notes, sorting and arranging according to types of information
Read and look through all the data	Derive general direction of the participants' information and meaning, determine the tone of the ideas, impressions of depth and credibility
Start coding the data	Organise the data into typical categories, segmenting sentences and labelling the categories with terms in the actual language of the participants

Source: Creswell (2014)

Saldana (2016, p. 3) defines a code as "… a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and / or evocative attribute for a portion of language-based or visual data." These are builds

generated by the researcher to construe meaning for later utilisation in cataloguing, recognition of patterns, development of theory and other interpretive practises (Saldana, 2016), including theory building or assertions by the researcher. Figure 14 aligns with Creswell's (2013) views and summarises Saldana's (2016) process to reduce open and particular data through multiple layers of abstraction toward meaningful assertions to the researcher. In accordance with the authors, Saldana's coding strategy was adopted to condense the real observed data to the required compact and abstract posited phenomenon, See Figure 14.

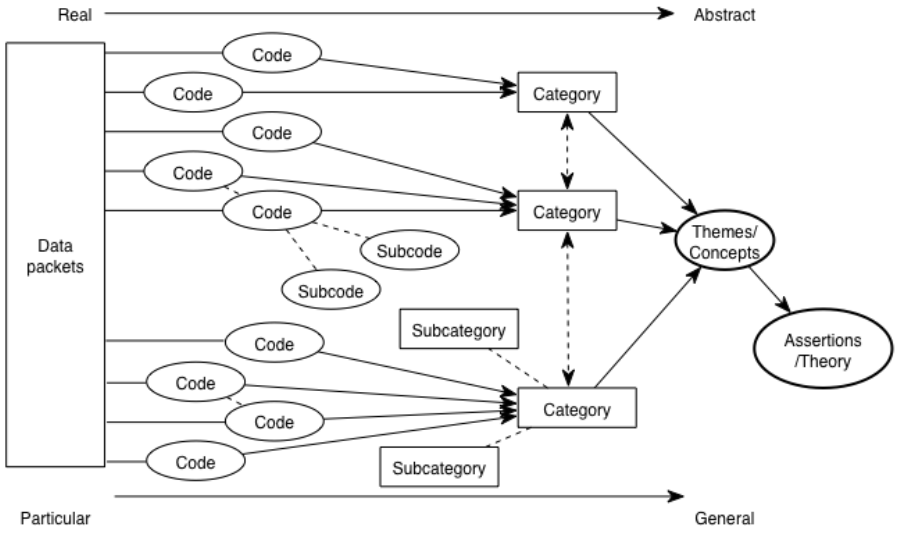

Figure 14 - Coding process

Source: Saldana (2016)

Proposing that coding needs to align with the research question, it is further reasoned that a single correct approach is unlikely to be available for researchers and, that multiple approaches are available for researchers to deploy. Citing several researchers, Saldana (2016, p. 3), argues that "various perspectives on coding decisions" exist leading to added complexity in the decision on the appropriate approach, see Table 26.

Table 26 - Decisions on coding

Coding premise	Literature
Coding must be prefaced and through multiple revisions, the subconscious develops connections leading to insight	De Walt and De Walt (2013)

Coding premise	Literature
Combinations of multiple coding methods and analytic approaches to enhance the validity and magnitude of the findings	Coffey and Atkinson (1996); Leech and Onweugbuzie (2005); Mello (2002)
Rely on detailed transcription notation and extensive analytic memos	Gee et al. (1992)
Eliminate coding and adopt phenomenological interpretation of themes and texts	Van Manen (1980); Wertz et al. (2011)
Reject coding altogether as being incompatible with newer interpretivist qualitative research and methodologies i.e. performance ethnography and narrative enquiry	Hendry (2007); Lawrence-Lightfoot and Davis (1997)
Prescribed coding methods are altogether mechanistic, futile, purposeless	Dey (1999)
Coding is a simplistic closed-system and a 'failure' in post-structural research approaches	Jackson and Mazzei (2012, p ix)
'… destructive' and violent' toward meaning making	Packer (2012, p79, 325)

Source: Saldana (2016)

In anticipation of the coding dilemma as suggested above, it is accepted that issues related to apprehensions and authority are likely to emerge amongst the actors in the research area. It further was predicted that multiple types of data would arise from interviews, field notes and business systems and documentations, and therefore, Descriptive Coding was selected as the primary method, structured by the techniques of Glaser & Strauss (1967) and Gobo & Molle (2017).

4.5 Quality, Validity and Ethics

The research aimed to produce the reality from the participants' perspectives, including the researcher's own experiences, and to ensure that the research findings were congruent with the reality. Terms concerning the validity and reliability of qualitative research rather embrace ideas such as "trustworthiness, authenticity and credibility", according to Creswell and Miller (2000, p. 124). Creswell (2013) suggests that qualitative research assumes that reality constantly evolves, is all-inclusive, and is multi-dimensional.

The works and procedures of Creswell and Miller (2000), Creswell (2014) and Gobo and Molle (2017) were utilised as the guide to validate the accuracy and corroborate the findings of the research. These included interviews and data collection consistent with approaches by other researchers and projects (Gibbs,

2007). Furthermore, the accuracy of the findings was ensured through Creswell's (2014) eight strategies of; triangulation, member checking, use of thick rich descriptions, clarification of bias, declaration of discrepant information, time in the field, peer debriefing and the use of an external auditor.

Reliability in research suggests repeatability, by which alternative quantitative enquirers may replicate findings in the same setting (Creswell, 2013). The approach of this qualitative study entails that interviews are conducted, and that data needs to be collected in a manner consistent with approaches by other researchers and projects (Gibbs, 2007).

Qualitative research sets out to determine the participant's view of reality. Thus, the strength of qualitative research is underpinned by validity and reliability and confirms the accuracy (Creswell & Miller, 2000) of the findings by the researcher, participants and readers. This entails that the researcher checks for accuracy and corroborates the findings (Creswell, 2014), utilising procedures, where validity in quantitative enquiry seeks consistency with other researchers and undertakings (Gibbs, 2007). This is assessed through the research paradigm, data collection, analysis, interpretation and presentation.

4.5.1 Validity and reliability of qualitative approaches

Creswell (2014) suggests that multiple approaches are adopted to check the accuracy of the findings, and proposes eight primary strategies to argue the exactitude of the study credibly, see Table 27.

Table 27 - Eight validity strategies

Strategy	Action	Contribution
Triangulation	Examine and juxtapose evidence from different data sources Establish convergence of themes	Coherent justification of themes
Member checking	Inform participants of the major findings, themes, analysis and theory of the report	Confirmation of applicability and accuracy
Use thick, rich descriptions	Familiarise readers with the setting	Readers experience an element of sharing the experience Rich and realistic results
Clarify bias	Reflective narrative, stating own experience and history	Open and honest narrative

Strategy	Action	Contribution
Present discrepant information	Publish contradictions Discuss evidence	Add credibility Visible reality
Time in the field	Active presence in the field as participant	Experience of the participants In depth understanding of the reality
Peer debriefing	Discourses, questions about the project with a peer reviewer	Interpretations from alternative perspective
Use external auditor	Review the research project by a person unfamiliar with the project	Objective assessment Improved transcription Relationship between questions and data

Source: Creswell (2014)

4.6 Research ethics and confidentiality

Van De Ven (2007) argues that ethics are an inescapable inclusion during the undertaking of engaged scholarship. It is understood that ethics comprise the necessary principles and governance of the treatments of human beings during research, to ensure privacy and eliminate abuse and prejudice.

Researchers require authorisations from gatekeepers to conduct research and to interview participants (Creswell, 2013), cognisant of the ethical governances. A disproportion could emerge between the researcher and the participants, which need to be alleviated through the development of respect and belief between the parties and the common cause of the research. Personal gain by the researcher, through exploiting the participants needs to be eschewed, and strategies that seek reciprocity between the researcher and the participants need to be explored (Creswell, 2013).

Caution to recognise ethical issues and their occurrence is summarised in Table 28 - Ethical issues in qualitative research, below.

Table 28 - Ethical issues in qualitative research

Locus of ethical issues	Resolving issues
Prior to study	Acquire approvals Determine association standards Secure permission from participants Eliminate personal vested interests Secure authorship for publication
Inception of study	Disclose purpose of the study Avoid pressurising participants into consent

Locus of ethical issues	Resolving issues
	Respect social norms Be cognisant of the needs of vulnerable populous
Data collection	Respect the site and avoid disruption, through building trust and mutual respect Avoid deceiving participants Eliminate power imbalances and exploitation of participants Create an experience of reciprocity between the researcher and participants
Data analysis	Avoid bias towards participants and report multiple perspectives including contradictions Respect participant privacy through coding and aliases
Data reporting	Report candid and honest, avoid falsification Avoid plagiarism Publish information that is not harmful to participants, utilising composite renditions to avoid participant identification Communicate clearly and in understandable language
Publication	Share data with the participants, stakeholders Avoid duplication or incomplete information Provide evidence of compliance and absence of conflicts of interest Disclose the funders and beneficiaries of the research

Source: Creswell (2013)

4.7 Conclusion

This chapter concludes that the research is a qualitative enquiry from a critical realist ontological and epistemological perspective. The research strategy is deeply ethnographic, and the data sources included data from a personal nature, the literature as a source of data, and data retrieved from sources within the utility and external to the research setting.

Chapter 5 Research findings - Manifestation of disharmony

Chapter 2 focused on the literature in the world of project management and various concepts and concerns in this research field. Discussions indicated that projects remain problematic and that two organisations with common goals but contradicting habits must co-exist paradoxically. Simultaneously, the researcher reflected on own experiences and knowledge gained in the world of work and during the time in the field for this research. The literature review and reflections supported observations in this chapter as an ethnographic narrative using inductive reasoning to further discuss the research question:

> *'Do disharmonies exist between the temporary and permanent structures in organisations that impede the interdependence between these two environments during the implementation of unique initiatives?'*

The narrative includes two ethnographic observation periods. Each of these reflects experiences as a professional practitioner and the findings of discussions with colleagues and participants in the profession. The first part (see section 5.1) occurred during the time in the field and discusses a project component that was particularly challenged and highlights several strata of disharmonies in the business. In contrast to the dilemmas as discussed in the first part, the second part (see section 5.2) presents a project component that became unusually successful, despite all expectations because it had been fraught with a dilemma. In section 5.3, discussions with fellow practitioners, other observers, and people that are 'known to know' are reflected on. These are all experienced individuals who are well experienced in their fields and generally appreciate the need to develop knowledge on the research problem further. In selecting these persons, particular attention was paid to avoiding selecting only individuals with negative experiences but ensured that all participants were broadly exposed to the business world. Information was solicited from these individuals through using semi-structured interviews as per the research design.

5.1 Observations #1: The build project

The firm is presented as the research setting for this single instrumental discussion. As discussed, the researcher is employed in the firm's project management office centre of excellence. A reflection is done on a single project to highlight the network establishment, complexities, ANT interpretation of the project initiative, and observed disharmonies.

The build project is discussed as a symptom of recorded inter-organisational project issues. It is observed that several project outcomes within the utility and the subsidiary are consistently uncertain, as the characteristic expectations of on-time, on-budget and within benefit are regularly ineffective. This ineffectiveness appears consistent with the results from Standish Chaos (Hastie & Wojewoda, 2015) and KMPG (KPMG, 2019) reports, and the literature reviews. The KPMG report submits that despite the presence of project management methodologies and project structures in organisations, projects remain challenged, and project management offices remain largely ineffective.

5.1.1 The firm

5.1.1.1 Organisation structure

The firm comprises a centralised organisation structure within this research setting, with five revenue-generating product groups and six services groups. Each group entity is managed by a senior manager, accountable to the group chief executive officer. The revenue-generating groups are unique, each with diverse offerings to the industry. These product groups entail a new asset generation faculty (A) in the civils and electrical infrastructure domains, large electrical and mechanical systems maintenance faculties (B) and (C), an asset movement faculty (D), and materials handling faculty (E). The service groups provide shared services to the revenue-generating groups, and designed to optimise common and repeatable services typical to general administration. These six common shared services comprise group finance, human resources,

risk and resilience, strategic enablement, new business development and compliance.

Figure 15 below illustrates the high-level organisation structure, with brief annotation of each functionality. In the permanent organising form, it is noted that an organisational framework exists, complete with underpinning business systems to serve each product group, as well as the internal service dependencies amongst the shared services entities. As and when the firm executes projects, the temporary organising form comes into existence for the duration of the project.

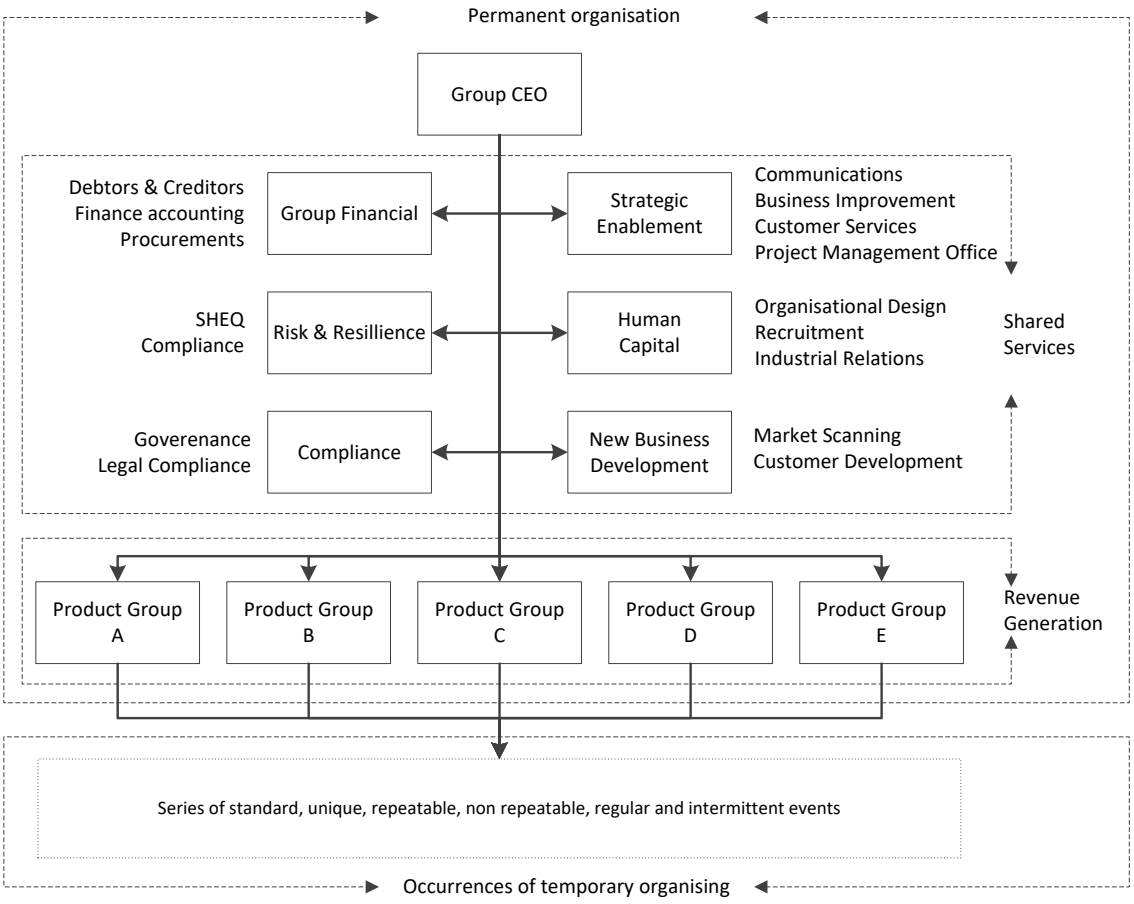

Figure 15 - Firm's organisation structure

Source: Author

5.1.1.2 Organisational control mechanisms

The firm convenes several permitting authorities, existing at cascading strata in the organisation structures. These comprise the executive committee as the most authoritative level at the executive group level. Here strategy, operations and direction are deliberated, and membership comprises the chief executive as chair and all senior managers as members. Two subcommittees exist at this level; divisional tender committee as a control authority permitting new procurements and modifications to existing procurements, and investment committee to permit capital planning and expenditure.

At each service and product group level, the commanding authority is a group management committee with the senior manager as chair and the middle managers as members. Emulating the executive committee, strategy and direction are deliberated. Further sub-committees exist, including the operations committee addressing daily business operational issues.

5.1.1.3 Organisation operational mechanisms

The internal business processes and transactions management mechanisms are designed to serve all product and service group from within a single control system. All shared services processes are set up to provide business transactional mechanisms from the shared services functionality. The firm subscribes to a high-performance model where organisation structures and business processes are typified to maximise efficiencies, regardless of locus within the system.

The high-performance model comprises standardised processes, multiple document inscriptions, human resource role definitions, enterprise resource planning solutions and various best practices ITC-based applications.

5.1.1.4 Discussion

The firm appears systematically structured, with the required functionality in business systems and processes. It is thus anticipated that durable networks,

within effective ecosystems exist for all systems and subsystems, where behaviours and communications are pervasive throughout the firm. It is thus anticipated that durable networks, within effective ecosystems exist for all systems and subsystems, where behaviours and communications are pervasive throughout the firm. It is further required in such a system with a single shared services faculty, that this will present high levels of familiarity and repeatability to the product groups in their service offering.

It is further intended through the business design and anticipated as a result, in such a design that fractal qualities exist and, when resources serve various entities, those fractal values are consistent and lead to maximum efficiencies. To establish functional ecosystems and durable networks amongst working teams and groups, this cannot be limited to human resources only, and business systems must be fully integrated. These business systems comprise both human and non-human components.

5.1.2 Antecedent to the build project

The firm owns and occupies a large complex of offices and production studios, and these comprise in more than 350 buildings and are dispersed over a substantial industrial park. All maintenance and improvements to the fixed assets are executed through a property administration department located within and controlled by the group financial faculty. In circumstances where any of the service or revenue-generating groups require new or large improvements to assets, approvals are sought from the executive authority at the organisational apex of the firm, and final permission is granted from the investment committee.

The observations discussed review the execution of a project to reconstruct a process plant previously destroyed in a fire. This plant is essential to the business operations and sustainability of the product group (B) within which it functioned. The old plant was many years old, and the destruction by fire was caused due to antiquated technologies and operations. The owner of the plant (B) decided to design and construct a state of the art process plant, which is fully automated to current day technologies. Budget approval for the entire process plant needed to

be acquired, and (B) approached the relevant executive permitting authorities, and the project was approved.

Executive governance requires that where applicable and possible, internal capabilities must be utilised to provide services to the firm's business areas. Therefore, the plant owner (B) assigned the firm's property services division (PS) to provide the oversight and internal project management of the project.

The project comprises four parts: process plant design and specification, process plant construction and commissioning, and, building enclosure design, building enclosure construction. Considering the executive governance of insourcing and the firm's ability to execute civils and building works, it was decided to appoint product group (A) to perform the building enclosure construction. Process plant design and specification, process plant construction and commissioning, and, building enclosure design was to be outsourced through competitive market contractors.

Quite a time prior to the decision to develop a fully automated plant, (B) initially decided to replicate the destroyed plant and appointed a specialist organisation, as outsourced entity, to design the building for the new plant. At the time, the new plant was not designed. On review, it was decided to build a completely automated plant instead, and the building construction was deferred.

A matrix management form for the project thus exists, which in this event, is a hybridised framework where the project manager does have full authority over the outsourced entity, but not the budget or the internal resources from the shared services.

5.1.3 Project life cycle

The project role players are identified as members in Table 29. Their functions in the project, relationship to the firm and the manner of engagement with the project is listed. The form of engagement also indicates the binding contract format with outsourced entities.

Table 29 - Build project role players

Member		Function	Relationship	Engagement
Sponsor	CFO	Sponsor	Report to Executive	Project charter
Property services	PS	Develop the project for B	Report to group finance	Structure
Project manager	PM	Single point of responsibility & represent PS	Report to CFO	Project charter
Operating product group	B	End user	Report to Executive	Project charter
Construction product group	A	Build contractor	Report to Executive	NEC 3 ECC (E)
Professional consultant	HG	Building design	Report to PM	NEC 3 PSC (A)
Professional consultant	HG	Plant design	Report to PM	NEC 3 PSC (A)
External contractor	WB	Plant constructor	Report to PM	NEC 3 ECC (A)

Source: Author

Further to Table 29, the role players' relationships are grammatically depicted. Figure 16 illustrates the project structure for the new plant and the relationships between the role players.

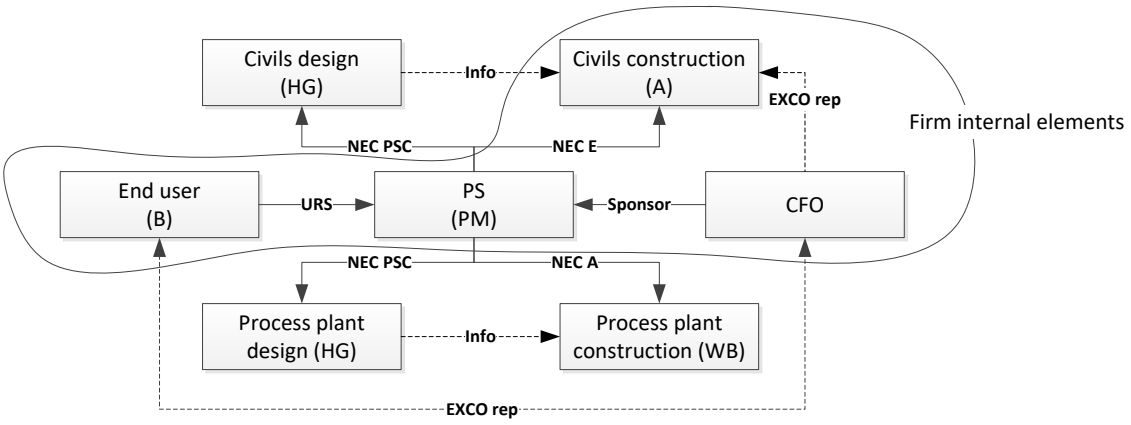

Figure 16 - Project execution structure

Source: Author

5.1.3.1 Project initiation

- Setting up

(PS) is customarily focussed on maintenance works and small asset creation initiatives. At the time, the department did not employ experienced project managers, and they approached the firm's strategic enablement service group to assist. This service group contains a project management office (PMO) centre of excellence as part of their service delivery. (PMO) recruited

experienced project managers (PM) and assigned these to (PS) as permanent resources to project manage the complex (PS) projects under (PS) supervision and control.

- Establishing the team

As mandated by the executive, (PM) utilised the project management methodology (PLCM). The group financial executive (CFO) undertook to function as the project sponsor, and (PM) processed the project charter documentation and kicked off the project. (PM) sourced a procurement officer from the Group Finance procurements department.

Essentially, the project charter empowers the project manager as the primary actant to exercise agency over all actors and actants within the project network that he establishes. It is notable that the project charter was approved by the sponsor, the (A) general manager and the (B) general manager as the plant owner. (PM) assumed that all resources were successfully translated to be punctualised actors and recruited within the temporary network. (PM) then proceeded to, under the auspices of the charter, translate (SA), the buyer and human resources into the network and durability was initially assumed to be established.

5.1.3.2 Project execution

- Finalising requirements

(PM) first engaged with the (B) experienced employee resources to establish user requirements (URS) for the new plant. Thereafter, (PM) processed procurements documentation to solicit and appoint an experienced designer for the process plant and the building. Once the process plant designer (HG) was appointed, (PM) facilitated design interactions with the (B) specialists and the final process plant design was completed. The process plant designer (HG) developed detailed specifications, called works information (WI), for (PM) to raise procurement documentation to solicit and appoint a process plant constructor (WB).

Concurrent with the design of the automated plant, the designer (HG) was instructed to review the building design for compatibility and the old design was revised to accommodate the new plant and a new steel and concrete structure design was finalised.

- Finalising the role players

The project team includes all role players, with the project manager as the central authority and single point of responsibility for the project. These role players are part of a complex ecosystem and interconnect as members of the project manager's network. On the build project, these are listed in Table 29, with their function, relationship to the project manager and form of engagement. The form of engagement is the contract between the member and the project.

- Appointing the execution contractor

The discussion focusses on the procurement and construction of the new steel and concrete building for the new plant. See Figure 16, Project execution structure. It was noted earlier that in the firm: 'Executive governance requires that where applicable and possible, internal capabilities must be utilised to provide services to the firm's business areas.' (PM) and (PS) agreed with (CFO) and the executive that the internal organisation (A) should construct the new building as the civils and electrical built environment is their core business.

For purposes of ensuring that costs are expended to the best interest of the firm, (PM) acquired a professional cost estimate from the specialist designer (HG) for the building construction cost and also requested (A) for an initial cost estimate, based on the design. These two cost estimates were relatively closely matched to establish a target cost and (PS) instructed (A) to proceed. Although the work was undertaken by one of the firm's internal product groups, (PM) utilised a business standard contract form, New Engineering Contract (NEC ECC), payment option E cost plus fee – as the governance for the relationship between (PS) and (A). The utilisation and provisions of the

NEC contract form placed the project team in a position to work together with the goal to achieve the work at the lowest achievable cost to the firm. A small percentage mark-up is provided for to cover the overheads costs of (A).

- Constructing the building

At the commencement of the construction work and pursuant to the NEC governance, (PM) requested the detailed construction plan from (A) site agent (SA). (PM) further requested planned value estimates from (SA) to establish cash flow requirements and availability with (CFO). The team established meeting regimes to discuss technical matters, work progress and future planning.

> *PM: Ok I have set up the project teams and we are meeting weekly. (SA) will report on the project schedule and the project finances in those meetings.*

(PM) noted that the project schedule was poorly produced and irregularly submitted by (SA). Furthermore, (SA) did not produce the required financial planning reports either. When (PM) expedited these documents from (SA), it was reluctantly produced and of poor quality. (PM) raised this with the researcher for advice. He was advised that he urgently convenes early warning meetings with (SA) and find means to support him.

> *PM: I'm concerned. I think they (A) appointed an inexperienced (SA). He is simply not coming to the party. I asked for the documents and have to drag it out of him.*

(PM) concluded that (SA) was inexperienced and unwilling to work close to (PM) and then decided to spend time on the site daily to physically expedite the works progress with (SA). During the works on site, (PM) discovered that the team was not following the projects schedule. Acting upon internal advices, (PM) assisted (SA) and developed a detailed schedule, abstracted to terminal tasks at daily action levels.

Being internal to the firm's own resources, (CFO) anticipates that the cost will be controlled to the firm's best interest. (A) started presenting costing reports for (PM) to assess and release payment. During the assessments, (PM) concluded that the costs reported did not relate to the planned costs and were not market related either. (PM) questioned this phenomenon with (SA) who did not respond. (PM) then escalated the matter to (A)'s portfolio manager (PO) and requested that (A) takes the responsibility to control costs to the initial estimate.

> *PO: Don't tell us how to run our project. This is a cost-plus job. It will cost what it costs.*

(PM) escalated the matter to (CFO) and convened a site visit with (A)'s senior manager, (CFO) and the strategic enablement senior manager. During the site visit, (PM) demonstrated the slow progress and apparent limited progress in relation to costs.

(A)'s senior manager and (PO) insisted that:

> *'This is a cost-plus job. It will cost what it costs'.*

(CFO) enquired against what target the cost is controlled and received no reply. The building works continued, the planned schedule became significantly overrun and the costs overran significantly. (PM) issued written concerns to (CFO) asking for sponsor intervention, and reported monthly to the strategic enablement service group and the end user (B) that the building time and cost is running out of control.

> PM: The work is now taking 3.5 times as long as originally planned and is costing 2.5 times the approved value! *These delays will also impact the building and commissioning of the process plant and run into the next financial years without the necessary capital expenditure approvals.*

> *PM: I report this to the bosses but no one listens. (SA) does whatever he wants and (PO) protects him.*

PM: I report this to the bosses, but no one listens. (SA) does whatever he wants and (PO) protects him.

- Completing the building

(PM) and (A) finally agreed on a completion date, and (PM) released the procurements of the process plant construction. (PM) reported that it is critical that (A) completes the work in order for the plant contractor (WB) to commence work.

PM: If (A) is not finished, we will end up paying waiting time to (WB). So, when the time comes, they will have to leave and (WB) can complete what little is outstanding at (A) cost.

This transpired and (A) demobilised site, and (WB) started work. During the (WB) activities, (PM) discovered that large parts of the original building work were never completed by (A) and (WB) did this outstanding work at significant time and cost penalties to the firm.

At completion of the building, the final time impact to the firm was an overrun of an additional 233% on agreed duration and the cost was overrun by an additional 125% of the initial estimate.

5.1.4 Organisational and Maturity Complexities

5.1.4.1 Organisational

The project sponsor is representative of the project at the stakeholder level, and the project manager represents the project at execution level.

- Business structures

External to the project team as a subservient organisation is the permanent organisation form providing essential non-human technological artefacts to the network, typically; methodologies, processes, ITC solutions, policies, procedures and templates. In addition to the stationary mechanisms, the

permanent organisation avails human resources to the temporary organisation form's network. All these are enrolled as actants. The complicity of all actants in the network, to the order of the primary actor, is provisional to the durability of the network and when that complicity fails, the network collapses.

From an operational perspective, the firm's permanent organisation is functional, and is in accordance with the PMBoK (2017) and Kerzner (2017) definitions. When organisational change is implemented, the hierarchical control is top-down, and the project manager is a part-time appointment. Control of the change is thus with the functional manager, and the project manager has little authority, functioning as a coordinator.

When projects are implemented by (PS) for the firm, this shifts towards the matrix organisation, and specifically, a hybrid between the weak and balanced matrix occurs. Within (PS), the project manager is accountable to the functional manager who controls the budget and resource allocations in accordance with the firm's delegation of authority structures. However, the project manager is the single point of responsibility for the contract management of outsourced services. Being appointed as a manager, it is assumed that he has total authority over the project. His status with regards to delegation of authority is incoherent or inconsistent with what is required for him to have total authority in terms of his appointment in the permanent organisation. Therefore, in terms of a responsibility matrix, he can only be responsible, but not accountable as there is a higher authority "governing" his actions in terms of delegations of authority.

Neither the functional nor project manager controls the shared services team members. All human capital, procurements and SHEQ functionality are provided external to the project manager's area of control. These resources exist external to the project manager's network and the project manager has no authority over the performances of these resources. This entails that other networks exist of which the project manager is not a member, but members of those networks are members of his network. It is therefore incumbent on

the project manager to ensure that those members are recruited to his work environment as co-optive team members.

In the build project, (CFO) abdicated the project execution responsibility entirely to (PM), who, whilst accepting the role as the main or key actor, relied heavily on (CFO) for support at the permanent organisation network. (PM) assumed that (CFO) as the sponsor would be the main actor in the permanent organisation, and ensure that the 'black box' functionality of the procurement action-net serves the project.

- Relational

When (SA) started missing important schedule deadlines and betrayed (PM) by not reporting these, followed by cost reports that exceed the estimate values, (PM) escalated to (PO) who repudiated the approach to maintain cost and time utilisation to the best interest of the business. (PM) attempted to realign all the network members through restarting the 'translation process'. The two actors specifically targeted were (A) general manager and (PO), and (PM) successfully 'problematised' both and established that their view now is that (A) operates at actual cost, regardless of the cost. (PM) attempted to 'interesse' them to align to the principle of lowest cost and solicited the support of (CFO). It was evident that (CFO) remained 'interressed' to commit to the obligatory passage point, but that his 'mobilisation' relapsed and his 'enrolment' relapsed, thus 'betraying' the network and its actants, for reasons that could not be established. A visible breakdown of relationships and communication occurred, thus causing a weak link in the actor-network.

Note that it was decided that (A) would construct the building at actual cost, plus a small fee percentage to cover overheads, in order for the firm to acquire its new asset at the lowest cost possible. From the outset, (PO) and (A), in general, were not comfortable working at cost as:

> *(PO): My job is to make a profit. You cannot force me to work at cost only. My department's annual performance results will be dragged down through this! Our bonuses are affected.*

There is no provision in the financial reporting of (A) to separate cost reporting for projects done for profit and projects at cost only. (PM), (SA) and (PO) evidently did not share the same success aspirations on the new building project. (PM) further did not relocate to the same work area as (SA) and (PO) and the relationship could not be improved through improved familiarity. (PO) fully entrusted (SA) to execute the building project, whilst (PO) got on with his regular day to day tasks of overseeing a portfolio of projects. Contextually then, (PO) believed that (SA) was functioning according to his expectations.

This scenario created an operational divide between (A) and (PS), and between (PM) and (SA), and situations of disharmonies become apparent. Yet, (CFO) continues to understand that things are proceeding according to plan.

Therefore, when the executives were eventually campaigned to intervene, (A) senior manager was protective of his resources and was not challenged by the sponsor, (CFO). The latter did not champion the project or the relational break-down at the executive level during executive committee meetings and (A) remained unaccountable for significant time and cost overruns. The (B) executive remained uninvolved, despite being the end user, with the understanding that (CFO) owns the project and is the sponsor. This entails an abdication by the end user that, despite their dependence on timeous and valuable project completion, they deliberately place themselves at the mercy of others, at their own peril.

As a result, (PM) and (PS) were powerless as not being represented at executive level and (A) was able to proceed as they deemed fit. Here again, evidence of disharmony between the permanent and temporary form manifests in itself as breakdowns in the network.

Tensions and conflicts arose between (PM) and (SA), due to non-performance of (SA) and his construction team. Those tensions escalated to tensions between (PM) and (PO). (PM) states that the sponsor (CFO) did not

perform the sponsorship functions, permitting his executive counterpart in (A) to not be cognisant of the firm's best interests.

> *PM: (A) does not see (PS) or us as a customer at all. They simply don't follow instructions, they don't follow the NEC governance and they are a law upon themselves. I have written to (CFO), but he never responds. When I write to (A) their management don't respond either.*

When confronted with the time and cost overruns, (PO) remained persistent in arguing that the risk on cost-plus contracts resides entirely with the customer and not the contractor.

> *(PO): Cost plus is cost plus. On these contract forms you cannot apply fixed bill rates and the customer carries the cost risk entirely.*

(PM) agrees in principle with (PO) that this is the case when there is an arm's length relationship between contracting parties. But, he reminds that a fixed price contract form could not exist due to the integrated existence of (A), (B) and (PS). An apparent incongruence is evident here, where the parties have diverging opinions of the project's responsibilities and contributions to the firm. Clearly, an operational island arrangement emerges where (A) does not share the same aspiration of cost reductions.

> *(PM): He is right, but in this case, we are one company, and we must all control cost to the minimum. (A) are not managing their cost in that way, they do not manage their production efficiencies, they behave as if there is no limit to cost. Their labour is absolutely inefficiently utilised. How is it possible that they exceed the market competitive estimate by such large margins!*

Discussions with (PO) revealed that (A) feels itself at the mercy of the shared services procurement functionality and all attempts to mobilise them through CFO and the executive committee are met with no actions or improvements. The buyer is not supporting his end user and the appropriate authorities do

not enforce this requirement. Evidently, the buyer was not appropriately enrolled by (PO) and his team.

> *PO: We don't want to fight with (PM), but our hands are tied. I don't know what these buyers are doing. We load purchase requisitions, but the buyer does everything in his own time. We always have to wait for materials and our people sit on site doing nothing. The same goes for HR in shared services. When we ask for more people, we don't get them.*
>
> *Now the costs run away with us and so does the time! There is no executive support for our business.*

The frustration voiced by (PO) resonates with (PM) and other project managers, who all claim that the firm's procurement mechanisms are deeply flawed and most important that (CFO), as the executive responsible for the procurement, does not improve procurement's performance. Discussions with other employees in the firm confirm these frustrations. A recent MBA study by a member of the finance service group explored the procurements department's performance and a clear conclusion is drawn from that study in addition to the experiences by interviewees;

> *(PO) and (PM): The procurement functionality is autonomous and not accountable for poor project performances. Buyers have no performance time limits and the end user has no input nor control over what and when is supplied after purchase requisitions are loaded.*
>
> *Procurements: The end user often loads purchase requisitions with poor quality. They don't talk to us about timelines or when they are going to load purchase requisitions.*

(PM), (PO) and (SA) allege that they had no control over procurements performances at all. In discussions with procurements resources it was noted that they have their own systems but claim that they are understaffed.

> *Procurements: We have systems people must follow, and we have governance. We do not report to the product groups or their project managers. These project managers do not want to follow the rules. We are understaffed and we can only do so much.*

(PM) agrees that procurements could have hampered time progress of (A) but insists that those delays do not justify the order of magnitude of the cost overruns on labour.

- Discussion

As a result of (CFO) relapsing and betraying (PM), the new 'interessement' of the (A) general manager and (PO) failed and as a result, (PM)'s network became unstable and collapsed. (SA) was now 'translated' and became 'punctualised' instead to (PO)'s new agenda and betrayed (PM)'s network.

It is evident from the above that operational silos exist within the firm. When the employees attempt to cross the boundaries into these silos, tensions arise, and stand-offs occur. It is clear from the above that the project manager is not regarded as the single point of responsibility, either in (A) or in (PS). The organisational culture of operational silos is discussed in section 2.2.3 and Figure 2. The inconsistent organisation structures, scaling across the forms of the functional, the matrix with its three forms and total absence of the projectised form lead to blurred lines of responsibility. This is an operational divide that is manifested in operational islands. These uncertainties further lead to inconsistent accountabilities when something goes wrong.

The executive did not take responsibility for the work, especially considering the sensitivity of a new opportunity where one group performed work for another group with no profit. The sponsor clearly did not understand the responsibility of sponsorship and did not represent the project at the highest authority level. At time of this report, the executive views (PS) as the responsible party for permitting over-expenditure and (PS) accuses (A) for inattentive cost management. The impasse remains.

5.1.4.2 Maturity

Severe maturity complexities became evident during the build project. These are complexities in terms of what forms the bonds and boundaries between and amongst the two organisation forms; the firm's general structures and project execution mechanisms.

In discourses with the (A) project teams and observing the firm in general, there has been no marked change in relation to maturity in project management during the entire period of this study over five years. It became evident that the disharmony remains, there is no elasticity in execution and the permanent form wants to retain rigidity at the cost of agility.

The researcher conducted a master's research project during 2012, where the project management maturity at levels 1 to 3 in (A) was explored utilising Kerzner's (2005) maturity model. At the time, it was concluded from the responses that the common language, or fundamentals knowledge, was alarmingly low and averaged 40% versus a benchmark of 60%. These responses further indicated that executive and line management maturity was equally low, in that these did not support project management through providing best practice mechanisms, training or executive support.

Using the 2012 results as a benchmark, the present observations are contrasted to those, and no change is noticed in the firm's setup or resource capabilities.

- Common language

  The firm's role profiles for project managers still do not detail formal educational requirements for project-based resources. It is incumbent on the employees themselves to determine if and at what level of project management knowledge is required. Neither line management nor the executive drive knowledge improvement in the domain, and as a result, employees are reluctant to volunteer their lack of knowledge. There appears a regular accord that the executive does not push for individual knowledge

development. During an interview with a senior manager in one of the product groups, the senior manager stated:

> *What you are doing is highly academic. In my business, all the project managers with all these high qualifications did not make it. The project managers that are successful are those that follow the process. That is all that is needed.*

It must be noted that this particular senior manager resides within a typical maintenance production mode, where their projects are highly repeatable. Of concern is that the manager is an executive within the highest organisational authority. In contrast with the aforementioned, the senior manager of (A) is more committed to project management training than his colleagues and supported programmes for those in his business that requested training. There was limited interest and the members that did attend training were relatively junior staff only.

- Common process

In the firm's project management office centre of excellence, the researcher and his team developed the firm's project management methodology (PLCM). This was concept tested with project members of (A), as this part of the business was considered most complex in its operations. The nature of their service offering comprises projects with high levels of uncertainty, and high demands of structured systems. At the time of concept testing the participating group in (A) fully supported the PLCM, as they had not only insight to it, but actively gave inputs to work packages and structure. It was thus assumed that (A) adopted the PLCM and was effectively utilising the system. Thus it was accepted that the PLCM was translated to become a 'punctualised' and a 'black box'.

The PMO CoE is rolling out the PLCM throughout the firm focussing on (A). During the induction sessions to the PLCM, the intervention leader inconspicuously observes and records demonstrations amongst the attendees, to establish some norm of common language. The PLCM is

workshopped in these inductions, and the attendees are encouraged to discuss their conformance to best practice and the PLCM.

Following the PLCM induction, the projects in the business area are then assessed by PMO subject matter experts. The assessment determines conformance as to best practice; not required, PLCM fully utilised, PLCM largely utilised, using bespoke system, and, no project management systems utilised. The assessments continue to reveal limited conformance to best practice and PLCM. As one senior project manager from (A) stated;

> *I am not using the PLCM. This is a lot of extra work that is now expected of us, I don't have time to do these things in the PLCM.*

The PLCM, as a generic framework, was introduced to the production and maintenance-oriented product groups, who felt that whilst it appears comprehensive, it manages complexity that is not experienced within their business areas.

> *In our business we execute projects every day, and we have our own working processes for that. The PLCM may have some good elements that we can use. We will assess it and get back to you.*

The senior contracts advisor from the PMO CoE who was fully involved in the development of the PLCM and who plays a key role in the roll out, inductions and assessments of the conformance is sceptical about the business uptake of the PLCM.

> *I invite them to the workshop and many of them accept the invitation. But when the induction time comes, many don't arrive. Those that do arrive are often distracted and some are just not senior enough. It's almost like they come because they have to. Then, when I assess their projects, I find that they do not follow the PLCM. It needs executive support, but I don't think that is happening.*

The assessment reports were issued to the (A) senior manager and the strategic enablement senior manager with the understanding that they will escalate the outcomes to the executive committee and then, that the entire committee would commit to the PLCM and maturity improvement.

During discussions with the senior manager from (A), knowledge development and the utilisation of the PLCM were explored to which he commented;

> *Some of my project managers went on training, but their performance did not improve.*
>
> *My project managers do not use the PLCM.*
>
> *The PLCM is not being enforced.*

During the new plant project, (PM) attempted to utilise the PLCM in conjunction with (SA). It is noted that (PO) was relatively committed to the PLCM, but (SA) did not conform thereto whatsoever.

> *PM: This is frustrating. I tried with (SA), to show him the best practices but he refuses to conform.*

- Integrated process

There exists no integration of processes across the operational islands in the firm. As opposed to fractals towards fluidity, there exists fragmentation in the business. Typically, procurements function independently of business performance requirements, citing governance prescriptions. The researcher has personally served as chairman of the procurement tender committee for a period, and observed the autonomy of the procurements section, where their resources are not placed or obligated as project team members. Similarly, the human capital functionality is not accountable to the project manager to provide resources and only operates at line function level. As with the procurements, this entails that the project manager is reliant on his own initiatives to include the shared services support.

The usual shared services operations processes are not aligned with the PLCM processes with an integrated perspective. This is a further source for operational exclusion and disharmonies between the temporary and permanent form, where the permanent form is not supportive of the temporary form. It is evident that the firm does not operate with project management at the core of its business strategy. Yet, the greater bulk of the firm's revenue is generated through project execution, be it unique or repetitive maintenance projects.

- Discussion

The maturity in project management has not shown improvement since the survey in 2012. This is despite the development and induction of the PLCM as an operational enabler for project managers. Projects are plagued by inconsistency in the actions of the project managers. During workshops, the PLCM induction facilitator explores maturity with the attendees;

> *Are you prepared to take over a project from another project manager, which has been reasonably progressed, at risk of disciplinary action if the project is not completed to the required scope schedule and budget?*

The responses are regularly negative and upon further enquiry it is replied;

> *No. I am not prepared to take over the project because I do not know what the exiting project manager was doing.*

In addition to the poor assessment results, this reveals the project management working groups as not conforming to the PLCM, or to shared views of project management best practices, and there exists a suspicion of deliberate secrecy.

The maintenance and production environments inform that they view their daily initiatives as projects and have developed processes for these. Despite their commitment to reveal the PLCM towards common improvement, nothing is forthcoming. As the PLCM induction facilitator put it;

We expedite this with the product group managers, who refer us back to those very line managers who undertook to review it, with no intervention from them as senior management to implement it.

It is evident from the above that not only do operational islands exist, there is no conscious effort towards improvements in maturity at levels 2 or 3, where integration should exist amongst all business processes. It can be deduced that despite various efforts: maturity remains low, complexity cannot be tolerated and projects remain challenged. Further to this, in the light of ANT as a new perspective, what needs to change?

5.1.5 An actor-network perspective

5.1.5.1 Introduction

This section discusses the conditions towards success and an interpretation of the phenomenon of project challenges as perceived through an actor-network theoretical lens. The actor-network theory principle prescribes the sociology of translation as the core to establishing durable networks (Callon, 1986; Latour, 2007; Law, 2009) wherein humans and non-humans coexist and how these elements co-function within the social. Durable networks can facilitate bridging the divide between the permanent and temporary forms and contribute to the observed phenomenon of disharmony to be mitigated.

The focus changes and complexity spontaneously occurs within the network that is mechanistically designed. The facilitation of complexity is not mechanistic, but symbiotic and organic in nature, thus calling for contextual behavioural competencies that can be facilitated through implementing ANT principles.

5.1.5.2 Process of translation

The main actor identifies potential actants, and for purposes of this discussion, (PM). As the single point of responsibility in this project, the main actor, (PM) is required to establish a durable actor network though which all actants within the

network become ‘punctualised’ to do his bidding in anticipation of the successful delivery of the scope, schedule and budget. The main actor recruits the potential actants and through the process of translation, converts potential actants to punctualised actants and maintains the punctualisation to ensure durability of the network See Figure 17.

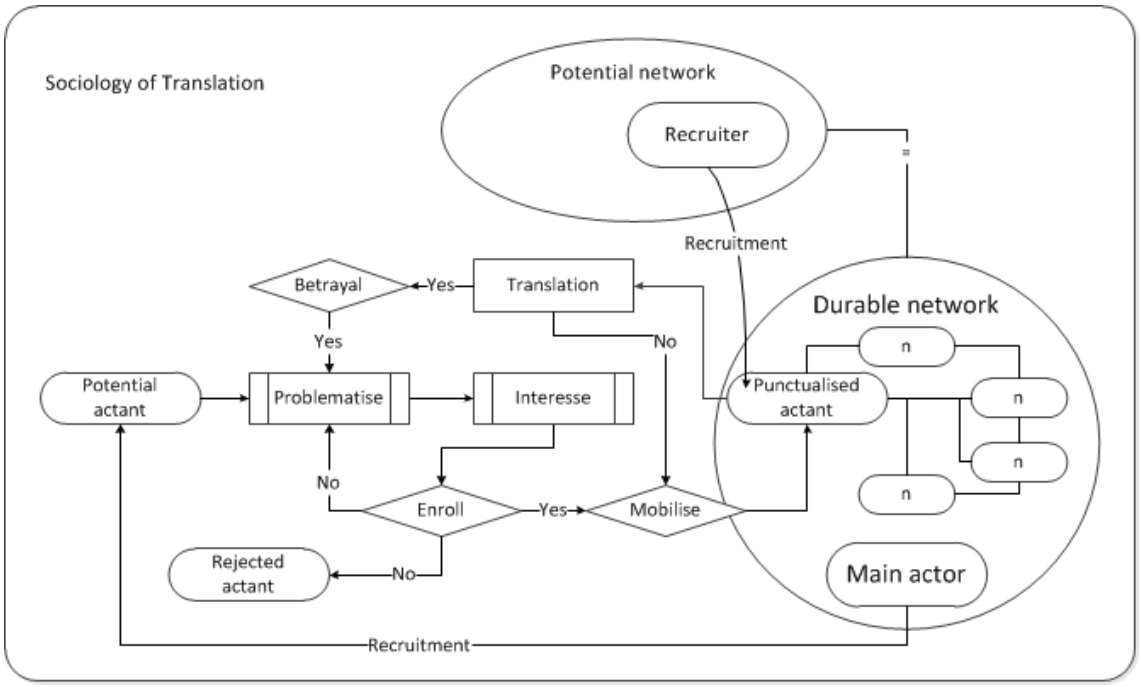

Figure 17 - Sociology of translation

Source: Adapted from Callon (1986)

(PM) identified (CFO) as the sponsor, who then agreed to this position by signing off the charter. (PM) recruited a project buyer to develop the contract form and register the project on the firm’s ERP system to facilitate cash transactions between (A) and (PS) for internal progress payments as the work progresses. Finally, (PM) recruited (PO) and (SA) to represent (A) on the project. This then resulted in an actor-network where (PM) is the focal or main actor, with the building completion as the obligatory passage point for (PM) in his service to (PS). Through clarification discussions in centres of calculation, (PM) facilitated clarity of the parties’ roles on the project.

In a separate actor network, (PM) recruited the main actors of the consulting firm (HG) and contracting firm (WB) to facilitate durability between the design and

mechanical construction work, since the designer (HG) was also the commissioning engineer for (WB)'s mechanical works on total project completion. This is mentioned for clarity, to show that (PM) functioned as main actor on other networks.

The roles of all actors on (PM)'s networks are listed in Table 30.

Table 30 - Actors in (PM)'s networks

Member		Function	Relationship	Engagement
Sponsor	CFO	Sponsor	Report to Executive	Project charter
Property services	PS	Develop the project for B	Report to group finance	Structure
Project manager	PM	Single point of responsibility & represent PS	Report to CFO	Project charter
Operating product group	B	End user	Report to Executive	Project charter
Construction product group	A	Build contractor	Report to Executive	NEC 3 ECC (E)
Professional consultant	HG	Building design	Report to PM	NEC 3 PSC (A)
Professional consultant	HG	Plant design	Report to PM	NEC 3 PSC (A)
External contractor	WB	Plant constructor	Report to PM	NEC 3 ECC (A)

Source: Author

5.1.5.3 Centres of calculation

Communications, technical and progress meetings are regularly conducted at the behest of the main actor, the (PM). The project documentation or 'scripts' are developed in these 'centres of calculation' where all actants are successfully enrolled and mobilised through the process of 'translation'. The project plan and schedule then become the second obligatory passage point, through which the project must pass to be successful in terms of the prescripts of the authorising authority who sanctions the capital expenditure (CAPEX VOTE).

5.1.5.4 Establishing the project networks

The process to establish the networks is concurrent with the continuum of translation. As the network evolves, complexity is spontaneously introduced, due to divergent interests of new entrants. The main actor has to remain cognisant of potential disharmonies amongst the actors, who may have competing interests

and may bring with them legacies of distrust. These elements co-exist with the same values of durable co-optation yet simultaneously evolve as the social as the social remains in a continued transient state.

At a higher level of abstraction in this project, (PM) is a member of (PS) and thus an actor in the network of the manager responsible for managing the functioning of the property services department. At a higher level, the (PS) manager is a member of the group finances network headed by (CFO).

On this project, the firm's actor network ecosystem is illustrated in Figure 18. The permanent organisation form itself is an actor network with the CEO as the main actor. The senior manager of each service and product group is again the main actor of each of those groups. The group contains various departments and subsections, each with another main actor and actants. Thus, for the permanent organisation to exist, each of these actor-networks need to be durable on their own and co-opt as 'black boxes' to the CEO's network.

Pursuant to Figure 18 it is evident that when the build project came into existence, actor networks emerged between the (PM) network and the networks of support services and shared services. This required of (PM) to effectively 'translate' the main actors of these other networks and then recruit and 'translate' the individual actors from there to his actor-network. Figure 18 serves as an illustration of the discussion above.

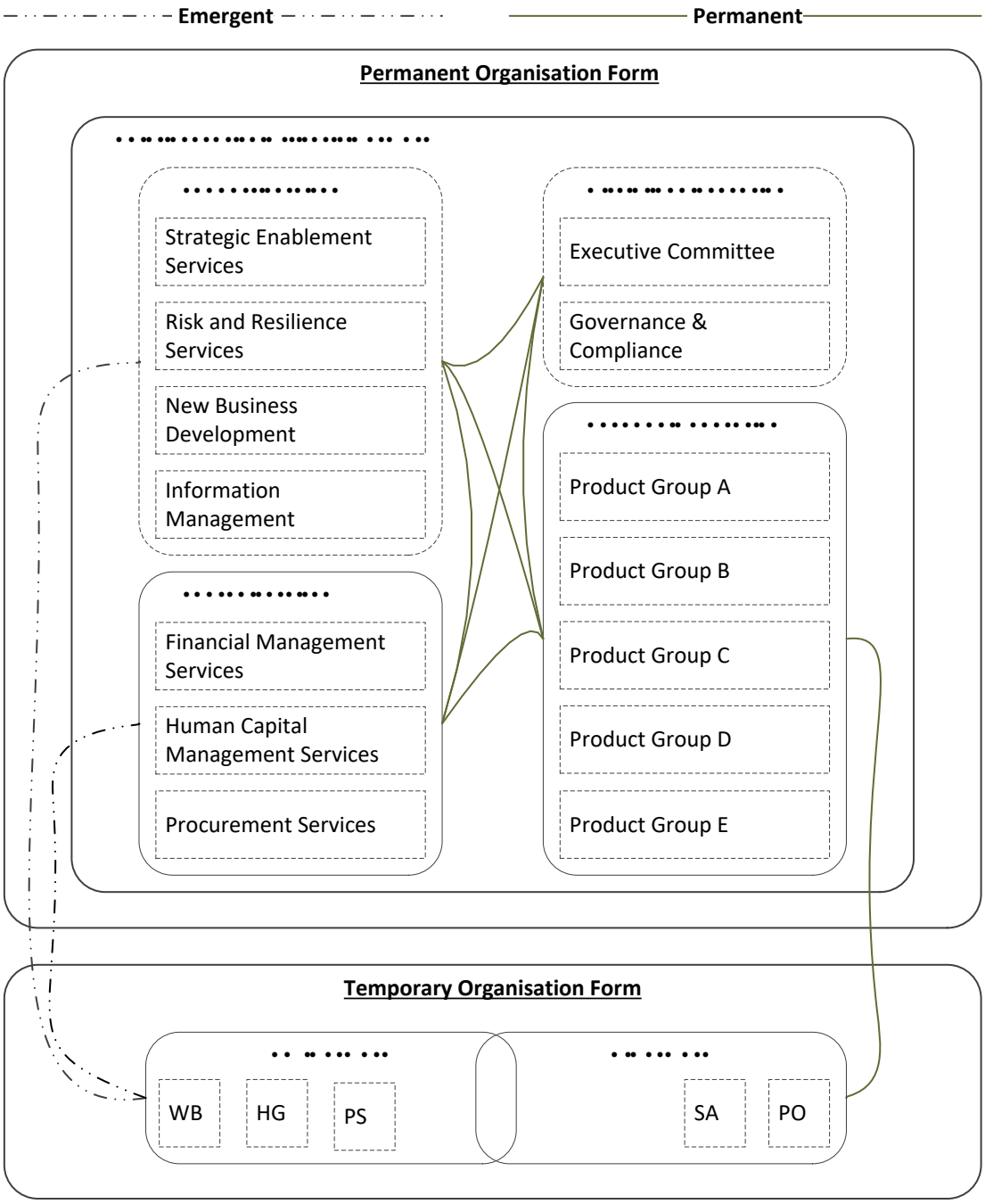

Figure 18 – The firm's actor network system

Source: Author

5.1.5.5 Obligatory passage points

(PM) established a network and successfully 'translated' the actants towards the approved capital expenditure vote with the investment committee. The approved vote itself was the first obligatory passage point (OPP). The project outcome is

an obligatory passage point to the end user, where the process plant is indispensable to the end users' business goals. Several intermitted obligatory passage points exist as designed by (PM) as the main actor, and communications must pass through this domain. Compromising the durability of any of these actor networks will effectively harm the obligatory passage point of the CEO's network goal, which is the organisational sustainability.

Within the permanent organisation network, the project value contribution as a new asset to the organisation is the obligatory passage point for the sponsor. From the perspective of the sponsor thus, the (PM) 'betrayed' the sponsor by not achieving the initial estimate or project schedule. From (PM)'s perspective as the main actor of the temporary organisation network, (CF), (PO), (SA) human resources and procurements 'betrayed' (PM) and the obligatory passage point of the initial estimate and schedule was not achieved. It is common practice in project management that the project manager is the single point of responsibility and is duly so empowered through the project charter.

5.1.5.6 Black boxes

For the permanent organisation form to support the project or temporary organisation 'actor-network' there are thus other or external networks connecting to the project network. Those networks are independent or autonomous, providing services to the project network, and can be seen as 'black boxes' or 'obligatory passage points', where the interest is input from the project and output to the project. It stands to reason that these external networks need to be durable on their own. Where the 'black boxes' experience internal collapse or non-conformance, the project network is at peril of collapse.

Similarly, and through the same process, the main actor recruits the main actors of other networks to 'translate' those to become 'punctualised' as 'black boxes'. ANT prescribes that durable networks are considered punctualised and thus, form black boxes that exist interdependently with other actants and durable networks. Therefore, projects can comprise a collection of actants (humans and non-humans), black boxes, main actors of other networks and transaction

systems such as ERP applications. Within the (A) organisation, the (PO) project team and (SA) are anticipated to function as one black box in (PM)'s network. The procurement functionality, as an autonomous entity in the firm, is also required to be fully functional as a black box to both the (PM) in (PS) and the (SA) in (A). Therefore, there exists a fractal quality when multiple networks are successfully networked as punctualised actants and black boxes.

Therefore, whilst a network is stable and performing well, it can be a "black box". When dissonance occurs, it needs to be detected early, the black box reverts to a network perspective, and actions are required.

5.1.5.7 Project inscriptions

The firm utilises an extended project lifecycle model (PLCM) as the mandatory methodology through which all business areas are required to execute their projects for the purpose of consistency in the organisation.

5.1.5.8 Moment of betrayal

Special attention is required to ensure that each of these interconnected and interdependent networks remain durable through an unending process of natural transience. A member of a durable network may become attractive to another main actor who desires to establish his own network, which then may embark on a recruitment process towards translating that actant to enrol to his network. If such an actant becomes redirected, he betrays the main actor, and that network could become unstable or fail. It thus stands to reason that if any of these actants or black boxes stop functioning or through recruitment by another agency betray the main actor, the network they are a member of could become destabilised and or fail entirely. However, the culture of the permanent organisation form impacted on the sustainability of the enrolment of these individual actors. (CFO) as the sponsor, betrayed (PM) by not protecting the build project, the (A) senior manager did the same by not instructing (PO) to abide by the minimum cost principle, the buyer betrayed (PO) and (SA) by delayed procurements.

To maintain the network and ensure durability, (PM) assisted (SA) with a detailed project implementation plan and schedule. During the works progress, it swiftly became apparent that (SA) was not adhering to the project schedule and time slippage became culture. It further emerged that (SA) was appointing project resources on retention rather than task-specific where several became idle and underutilised. The buyer did not perform the procurement functionalities in accordance with the agreed project schedule for (A) and (SA), citing organisational red tape and bureaucracy. Material and plant cost values escalated beyond the initial estimate values and (SA) did not manage to contain those. (PM) continued to expedite performance to the schedule and initial estimate but failed to control (SA).

(SA) discontinued his progress report submissions and schedule revisions. Project costs and time slippage continued to spiral. The designers made limited scope revisions after the work commenced, which complicated the project schedule to some extent but did not make it uncontrollable. Reminders to the (SA) that the PLCM is not only mandatory but would enable (SA) to improve performance were disregarded by both (SA) and (PO). (PM) escalated the cost and time overrun to the sponsor, the general manager of (A) and (PO). The sponsor did not challenge the (A) organisation to improve its effectiveness. In response to (PM) insistence that the initial cost estimate and schedule are mandatory, (PO) insisted that the project is executed at cost plus mark-up, regardless of cost. No meaningful explanation was given to justify the time overruns. (SA) and (PO) then blamed the buyer and the procurement process for being laissez-faire and not supporting the project's urgency. They further accused the human resources management system of being very slow to resource the project requirement and when they did provide human resources, these came at a very high cost via labour brokers.

5.1.5.9 Discussion – manifestation of disharmony

When the PLCM was expedited in terms of utilisation and conformance, the (A)'s general manager confirmed that the (A)'s teams do not use it, and that it is not

being enforced either. A potential mitigating factor was overlooked; (PM) neglected effectively translating (SA) to conform to the PLCM. In response, (PM) attributed the poor (A) performance to their disregard of their primary enablement methodology. (PM) further argues that the sponsor, (A)'s general manager, (PO), human capital and buyer are members of the permanent organisation and that they were unmindful to understand and empower (SA), who is the key actor in the (A) temporary organisation. At completion the building, the ultimate cost was X+125% of the initial estimate, and the period y+233%.

The enrolment of actors and establishing networks commensurate with repeatable and predictable systems endeavours to establish fractal qualities in organisations and teams. Thus, what should have been fractals became fractures and fragments, notably as a result the main actor's failure to effectively facilitate translation. A noteworthy fissure is evident amongst the project team members, specifically, between the temporary and permanent organisation forms. In Table 31, several factors are evident that fractured the network and five areas of disharmony emerged namely, urgency, relational, executive ownership, silo temperaments and organisational systems.

Table 31 – Manifestations of disharmonies and betrayal

Manifestation	Disharmonies	Betrayal	
		Temp	Perm
(SA) not controlling schedule	Urgency	X	X
Buyer not adhering to schedule			X
Sponsorship failure	Relational		X
Relationship failure: (PM) and (SA)/(PO)		X	X
Buyer not working with (PM) or (SA)		X	X
(PS) and (A) teams not integrating		X	X
Absence of (CFO) sponsorship	Executive ownership		X
Absence of executive intervention			X
(A) insistence on not limiting cost			X
(A) insistence on arm's length contract form	Silo temperament		X
(A) general manager denial of (A) failures			X
(PM) changes scope		X	X
(A) not limiting cost		X	X
Buyer not working with other departments			X
Procurement system bureaucracy	Organisational systems		X

Manifestation	Disharmonies	Betrayal	
		Temp	Perm
Internal departments work at zero profit			X
Failure to use the PLCM		X	X

Source: Author

The five areas of disharmony in the relationship between the temporary and permanent forms originate largely from betrayal in the permanent form, suggesting that the permanent organisation is principally uninformed about project management as the implementation strategy.

5.1.6 Conclusion: The build project

This section highlights that where the organisation, despite a desire to be cost effective and appointed its own construction arm, significantly failed in its cost saving endeavour. It transpired that this was primarily as a result lack of control over its own resources, and a distinct ‘arms-length’ relationship within its own departments. It would be anticipated that as internal groups working together, that the concept of ‘acting with mutual trust and cooperation’ is imperative above all else.

As the single point of responsibility, the project manager assumed that at executive level, where he has no access, the business leaders strive towards the same goals. The project manager further assumed that organisational fractal qualities cascade through the ranks and that business structures and systems are suitably mature. A review of the project revealed that the project was executed by a team and an organisation who are insufficiently mature at any level of Kerzner’s (2017) maturity model. The team resources displayed insufficient common language and failed to utilise the common processes provided, which prevented the third level of integrated functionality. The learnings from this are embedded in the Sociology of Translation, where the precipitating actors recruited incomplete and ineffectual actants.

After recruitment, the first action of the Problematisation of the identified actants was ineffective, where the things necessary to be improved or changed were

never identified. Further, the main actor did not reject those actants that could not be problematised and started establishing action nets with ineffectual resources. The crucial next step of Interessement was not carried out or if had taken place, it was only done perfunctorily which resulted in team members that did not do the project's bidding, but they instead remained loyal to the locus of origin, at all cost.

This fundamental failure to apply the Sociology of Translation at all management levels, cascading from the executive to the project manager and his team is suggested to be the primary contributor to the project's failure. Betrayal by the team members did occur, but was inevitable in the first instant, where had they been effectively translated, and then if that event of Enrolment was maintained throughout, the project had a chance to succeed.

5.2 Observations #2: The gas turbine project

The utility (see section 5.2.1) is presented as the research setting for this single instrumental discussion. As discussed below, the researcher was recruited to the utility in a project management support consultancy capacity.

5.2.1 The utility

A historical review is done on this single project to highlight the network establishment, complexities, ANT interpretation of the project initiative, and observed relations between the participating parties.

This section context is relevant to the researcher's experiences in a project undertaken in South Africa's primary electricity utility, generating and distributing virtually 100% of the country's electrical energy requirements via its national transmission grid. During 1990 until 2005, the utility had not developed new generating capacity of significance, showing only limited growth in the period. In that time, the organisation appeared to be in a maintenance mode, under the seemingly popular perception that its existing capacity was sufficient to sustain current and future demand.

At the time, the utility's own resources had limited experience on big build and mega projects, as those resources that were part of the previous big build programmes have either retired, resigned or were absorbed elsewhere within the organisation.

5.2.2 Antecedent to the gas turbine project

From 1971 to 1990, the utility delivered a steady growth in developing electricity generating capacity added to the commercial grid. The utility possessed a large engineering and project management division capable of initiating and successfully executing mega projects within relatively short periods, elevating the organisation to one of the world's top energy utilities. It is common knowledge that the utility's power-generating infrastructure is ageing rapidly, requiring increased maintenance and a programme to develop total replacements of older power stations. As mentioned above, the utility has not been in a large project build mode since 1990 and in the ensuing period, its capacity to do so has diminished significantly.

After 1990, that large engineering and project management division had no further purpose following the termination of the new build programme and was effectively shut down. Then, in the period following 1990, the utility was largely in operating and maintenance mode on its power generation fleet.

During 2005, the utility concluded that a substantial power shortage existed in the Western Cape requiring the utility to increase its peaking generating capacity in that area as a matter of priority. Due process was followed regarding the project viability and technology options were investigated. The Western Cape possesses no fossil fuels or hydro capacity to develop stable generation solutions, and the further nuclear expansion was not an option due to the project's urgency. Considering the limitations, it was decided to construct an Open Cycle Gas Turbine (OCGT) project, suitable for multi-fuel sources; low sulphur diesel, natural petroleum gas or aviation turbine fuel. The diesel fuel is sourced from a localised petroleum refinery.

The works comprised two parts; four turbines at Atlantis near Cape Town and three turbines at Mosselbay. The Atlantis facility was used as the project head office and the utility's internal project manager was located there together with the European technology consultant.

5.2.3 Gas turbine project life cycle

5.2.3.1 Project initiation

- Setting up

During 2005, the utility followed its regular procurement processes and the contractors for the power-island, civils infrastructure and balance of plant were procured.

The utility accepted that they possessed very limited technical and project management capacity and contracted with a European technology expert partner for the OCGT to provide technical support during the build and commissioning. Further, senior management required what they termed 'grey beards', experienced practitioners and advisors, to support their own relatively inexperienced internal resources to an accelerated learning curve in project execution, ensuring effective scope, schedule and budget management.

At end 2005, the researcher was recruited to join the project as an advisory to function as the support manager for the project manager and the project team at the Atlantis facility. At that time, the researcher was a member of a project management consulting firm, external to the utility. The researcher's role was to support the internal project manager and his Atlantis site manager to effectively construction project-manage the works from green field to final commissioning. The project scope comprised the on-site activities for the first four turbines, where the procurements for the power-island, civils infrastructure and balance of plant were all concluded with the contractors ready to commence.

- Establishing the team

The utility capacitated the project at site with technologists and managers from across its operations to function as learners, quality observers and future project managers. It must be noted at this point, that most of these resources did not know each other and never worked together. There was therefore no team familiarity or historical cohesion. The commercial functionality remained at the organisation's head office in Gauteng, given that the procurements were complete. At the point of starting the site activities, there was no office accommodation available for the utility's own teams, and they occupied office space at a small backup turbine plant some 40km away in Edgemead, Cape Town.

As the first works activity, the civils contractor established site in January 2006 and the researcher relocated to the site, to integrate with them and oversee their activities. The researcher's project management style is servant leadership, establishing team collaboration, common goals and partnering towards common benefit.

It must be noted that the civils contractor is a member of the utility's enterprises group. At the time of contracting, the civils contractor's annual turnover equalled approximately 15% of the total contract value. This not only entailed a sudden growth demand and stress on the organisational capacity, but it also introduced new complexities previously unbeknown to the firm. A further complexity was that, in addition to their construction responsibility; the civils contractor was also responsible for the entire civils design work, which they outsourced to professional engineers. But, due to time being of the essence, the civils contractor agreed to establish site and commence construction whilst the design is in progress. They appointed two external design consultancies; one for bulk earthworks, wet reticulations and roads and another for all concrete foundational work. This then required that design and construction activities are integrated with construction closely following the design and constructing as and when documentation is available. To mitigate the anticipated uncertainty, the contractor agreed with both the design consultants that each will place full-time resident engineers on site.

Despite being members of the same group, there was a very distinct arms-length relationship between the utility's management team and that of the civils contractor. There existed no familiarity and to a large extent, the utility's resources viewed the civils contractor as being compulsory. In turn, the civils contractor's team viewed the utility's team as strictly an unknown client and sought to apply the contract to full force.

> *The contractor held the view: We are not the utility. We are different and we have our own way of working.*
>
> *The unitality held the view: Well, they are a contractor. We have to use them because we have been told to, but we don't really know them. You have to make them perform.*

The power-island contractor is a large and well-established international firm from Western Europe, with high organisational sophistication and maturity levels. Their business systems are cohesive, and their staff is well integrated with their systems, cultures and language. There was a close coordinative relationship between the civils and power-island coordinator regarding foundational readiness and power island-occupation. From the power-island contractor perspective;

> *Our equipment is arriving as planned and cannot stand. When it gets here, we have to place it on the foundations. If we have to wait, there will be costs.*

The researcher recognised the unique dilemmas of; operational silos, relational complexities, technical and commercial inexperience, time pressures and potential hostilities. The project brought together people of different language origins, cultural histories, geographical locations – local and global, and, in conjunction with the aforementioned complexities presented to an ecosystem that required special attention to mitigate organisational disharmonies before they manifest.

To mitigate the relational complexities between the civils contractor and the utility, we arranged that the civils contractor will provide office accommodation for the utility's team members and we placed the office containers in the same yard, directly adjacent. From the outset, we endeavoured to integrate the two sibling organisations and establish a co-optive working relationship. This cohabitation continued for a few months, until the team could procure and erect the utility team's office space at a different locus on site. When the power island contractor arrived on site, he insisted on locating at yet another area, eventually resulting in all four main site entities at physically separated locations.

5.2.3.2 Works construction

Per the contract provisions, all contractors must provide detailed project schedules to the utility (the employer)'s team members. It is noted that there existed no project management standard within the utility at the time, and it was soon discovered that neither existed within the civils contractor. The power-island contractor, as mentioned earlier, is a sophisticated entity complete with detailed working mechanisms. However, none of these working mechanisms could be translated to either the civils contractor's operations, nor to that of the utility's project team members, as it is bespoke to the power-island contractor's own working techniques, and written in German.

The balance of plant contract contractor arrived later and the works for that part was relatively less complex than for the other two entities. Thus, there were no working techniques that could be cross-pollinated to other entities at site to establish some standardisation.

The civils contractor did not demonstrate a proficiency at performing systematic work breakdown and scheduling techniques. Their work was planned and scheduled at a very high level, and predictability of outcomes, and performance management versus planned activities were impossible. The power-island contractor, in contrast, expected total readiness of the foundational systems and

civils infrastructure, and their interfaces to their systems were relatively easily managed.

The civils works, being of high complexity and with multiple critical paths required constant attention, to the extent where our team effectively integrated with the construction team, and our own planner doubled as their planner. Working groups were established where the contractor's site project manager, their supervisors, the two resident engineers, their internal planner, the engineers, supervisor, planner and the researcher collaborated daily to expedite engineering, perform weekly and daily work breakdown, and expedite progress daily.

Gradually, the arms-length relationship became a co-optive one culture of common goal and familiarity was established. Both the utility's executive members and those of the civils contractor gave the project priority, became visible on site and actively participated in decision-making. When it became evident that some time compression became necessary, the decision to instruct the establishment of extended working hours and multiple shifts was easily achieved without difficulty.

A spirit of mutual trust and cooperation ensued and, whilst the site operation was not without conflict, these were rapidly resolved. The power-island and balance of plant contractors achieved the civils undertakings within their schedule and at completion, the works were completed in a record time. Both the European technology consultant and the power-island contractor reported that it is highly unusual to achieve a project of that nature in the time that it was done.

5.2.4 Organisational and Maturity Complexities

5.2.4.1 Organisational

The project was undertaken in earnest to mitigate power shortages and time to perform was of the essence. At the time, the utility's project teams had limited experience in initiating new large projects. Procurement processes were fashioned around the usual production and predictable business practice.

Permitting authorities convened at predetermined intervals and when change was required, a commensurate urgency was not straightforwardly endured.

Selecting an appropriate contract form was complex. The civils infrastructure works required to be designed in tandem with construction activities, which placed the utility in the predicament that significant change to the initial budget and schedule would be ubiquitous and unpredictable. In mitigation to the time and cost complexity, the utility selected its wholly owned subsidiary to perform the work. The selection of an inexperienced and relatively small contractor placed the site works at risk as the contractor would experience scope creep and internal organisation change to keep up with the increasing performance demands. In retrospect, the contractor did experience exponential change to its internal resource capacity.

The power-island contractor contract form was relatively unfamiliar to the contractor as was the requirement to provide detailed planning and scheduling. In addition, the utility required its contractors to utilise a project scheduling software application that none of the three main contractors were familiar with.

Exacerbating the contractual complexities, the utility's resources were largely inexperienced and rapidly learning. Further so, most of all site resources were required to physically relocate to the area. There was no regular infrastructure for accommodation of office space in the area. Thus, office space had to be site constructed and shared until it expanded. The teams had to commute daily from the nearest city to site. Labour was not readily available and many had to be relocated to the site area. As mentioned earlier in section 5.2.3.1, there was a natural distrust and arms-length culture from the outset.

Extemporaneously then, operational islands (Kerzner, 2017) clearly existed pervasively through all levels in the project establishment.

5.2.4.2 Maturity

Due to the utility not being in the new build project space at the time, no project management life cycle model or behavioural culture existed to be utilised on the project. Common language was limited, and the project management teams were largely inexperienced in the management of projects.

Document control systems needed to be developed as the work progressed, and much of the management activity relied heavily on the aptitudes of the individual team members. Whilst the utility operates a large ERP system, the functionality of that ERP was not extended to include the management of projects. A retrospective interpretation of the project team's maturity in terms of Kerzner (2005) reveal that the utility's team members were not suitably mature at any of the five Kerzner maturity elements. Not only was there a distinct absence of the common language, there was neither common process nor any level of integrated process.

5.2.5 An actor-network perspective

This section discusses the conditions towards success and an interpretation of the project as perceived through an actor-network theoretical lens. The actor-network theory principle prescribes the sociology of translation as the core to establish durable networks (Callon, 1986; Latour, 2007; Law, 2009) wherein which humans and non-humans coexist and how these elements co-function in the social. The sociology of translation was already discussed in Chapter 3 and is not theoretically expanded again here, but rather contrasted in the practice thereof.

On reflection of the project activities and retrospectively reviewing the context of actor-network theory and specifically the sociology of translation, there is a remarkable coincidence between the actions of the project teams and the theoretical framework of ANT. It is observed that ANT was exercised coincidentally and unbeknown to the researcher and the remainder of the teams, and the subsequent benefits of ANT have been returned.

The successful commissioning of the power island is the main obligatory passage point, to serve the utility and the geographical region's requirement to increase peaking power generating capacity. Other obligatory passage points came into existence in the requirement of seamless cohabitation on the project by the human resources and their inherent diversities.

At the outset, the team became aware of the project membership complexities as discussed and inadvertently problematised each key actor and the available material-semiotic actants. Awareness of the heterogeneous nature of the human actants and their origins led the team leadership to deeper explore the risks of the inherent and potential disharmonies amongst the actors.

Utilising centres of calculation early on in discussions amongst the utility's management team, the problematisation of the contractor's resources became clear and was pursued iteratively. These entailed an understanding of the human factors and the available systems and lack of systems. Existing inscriptions could not be applied without adjustment.

The process of 'interessement' followed surreptitiously, and in further centres of calculation, team members became interressed through discussions and clarity towards integrated team behaviours and working together cultures. As discussed in section 5.2.3.2, the spirit of mutual trust and cooperation that ensued the problematisation, established the moment of enrolment for the members and they became mobilised in the researcher's actor-network. That network again became punctualised as a 'black box' on the utility's project manager network. Inversely cascading the latter, it became punctualised in the utility's executive network, where the project sponsorship resided.

The utility's civil site engineer, planner, site supervisor and researcher were permanent members of the internal project manager's network. The members had to be translated by the project manager to seamlessly integrate with his own direct reports, the technology consultant, the balance of plant network and the network of the power-island.

All members with contrasting interests are easily enticed towards ‘betrayal’ of the network they are members of. These ‘betrayals’ are; personal interests relating to their relocation complexities, distrust of contractor / customer employees, non-adherence to policy and general insubordination. It was thus incumbent on the researcher, as a main actor of the network, to assist the project manager, the site construction project manager, and the contractors’ managers to each continually pay attention to the ongoing requirement of problematisation and interessement to ensure commitment and network durability.

Thus, it can be deduced that the value of the sociology of translation in ANT as a contextual framework, and particularly when projects are pervaded with the uncertainties and inherent imprecisions that the project was presented with, is undeniable as a major contributor of success in complex project undertakings. The matter of translation as the focal point through problematisation and interessement in a continuum to maintain the enrolment of the actants is demonstrated in this section.

5.2.6 Findings: The gas turbine project

This section highlights that where the organisation was novice at executing new build projects and despite being potentially fraught with disaster, achieved major success. On this project, the organisational leadership, at the highest level, displayed total commitment and teamwork was ubiquitous at all levels of management. A fractal quality of commitment was visible throughout the project lifecycle. It is noteworthy that in reflection on Kerzner’s (2017) maturity model, there was a tangible level of level 1 common language, but a distinct absence of level 2 common process or template documents to standardise practices. Theoretically, and in the absence of business systems, operational cultures, team familiarity and organisational maturity, this project should have been a failure or as a minimum, significantly challenged.

In retrospect, this project could be termed an ‘accidental success’, and, on closer examination the qualities, and contributions towards success, of Actor-Network Theory’s Sociology of Translation are highly evident. The precipitating actor(s),

which there were several of for different project components, initiated a culture of ‘acting in the spirit of mutual trust and cooperation’ and recruited human actors and systems that needed cautious and continued Translation to effectively co-opt and maintain a durable network.

Inadvertently and subconsciously, main actors emerged to take the lead and effectively processed their action nets’ members through Problematisation, Interessement, Enrolment and Mobilisation. Further, these main actors continually remained close to their teams and where potential betrayal opportunities emerged, the Translation process was re-initiated and maintained.

A critical contributing factor was the insight by the main actors to select a team leadership group that were appropriately motivated and competent. This translation process in multiple iterations was dynamic throughout the project, and in the absence of methodologies and business templates, the teams developed these as the project progressed. In contrast to the practices and outcomes with the project discussed under section 5.1, there were no assumptions on the behaviours of others and their systems.

5.3 Problematising disharmony

The researcher has observed that several projects outcomes within the utility and the firm are consistently uncertain, as the characteristic expectations of on-time, on-budget and within-benefit are regularly ineffective. This ineffectiveness appears consistent with the results from Standish Chaos (2020) and KMPG (2019) reports, and the literature reviews. Interpreting the KPMG report, it is evident that regardless of the presence of project management methodologies, projects remain challenged and that project management offices remain largely ineffective.

Interpreting the literature and the research institutions reports, the project delivery remains in a poor state, and this research thus explores the presence of the project organisation within the permanent organisation, and the responsibility of mutual subservience. During the research, the matter was further explored

through own field observations, discussions with employees and interviews with participants. A series of complexities were revealed, which appear regular across the project environment. During the research project and in the times prior, these symptoms are consistently evident, and are discussed below.

Consultations were conducted with employees in the following categories, where the context of disharmony was explored in Executive Management, Portfolio Management, Senior Project Management, Project Management, Project Management systems development, Corporate Risk Management, Communications Management and Skills and Talent Management. The participants comprised members in both organisation forms, from executive and middle management levels. It must be noted that many of the interviewees were not employed for extensive periods in either the utility or the firm, thus, they brought forward previous experiences beyond the setting from other organisations. This proved valuable to the context of the research, being the disharmony between the permanent and temporary forms.

One-on-one conversations with the interviewees explored the following concepts in semi-structured format. In each case, questions were presented to the interviewees allowing the conversation to evolve. Rich contextual data emerged from the conversations. The four main themes below were established and these were submitted as questions to the interviewees to inspire the conversation;

- Does elasticity, tension or disharmony exist between the temporary and permanent organisation forms?
- What is the nature of this elasticity between the temporary execution structure and the permanent execution structure - project versus production?
- How does the inelasticity between the temporary and permanent structures in organisations obstruct the interdependence between these two environments, during the implementation of unique initiatives?
- What are the elements of improvement required to address the inelasticity?

All conversations were recorded and transcribed verbatim. The data was compiled verbatim into a CAQDAS system and Microsoft Excel and systemised through codes, themes, categories and assertions per Saldana (2016). The themes and categories that emerged are listed in Table 32. These are further expanded with participants and supporting excerpts in sections 5.3.1 onwards.

Table 32 - Themes and categories of disharmony

Theme	Category	Sub-Category
On the Existence of Disharmony	Perception of disharmony	
	Presence of disharmony	
On the Nature of Disharmony	Distrust and suspicion	Distrust amongst Executives
		Executives distrust Project Managers
		Project Managers distrust Executives
	Fragmented organisation	Existence of Executive Islands
		Operational Islands
	Maturity complexity	Knowledge of project management
		Process driven
		Improper resource allocation
		Failure of Inclusivity
	Leadership failure	Weakness in Executives
		Weakness in Middle Managers
		Weakness in Project Managers
	Organisational failure	Weakness in Operational Support
		Weakness in Organisational Ability
On the Obstructions from Disharmony	Governance constraints	
	Heterogeneity between temporary and permanent	
	Organisational constraints	
	Process only	
On the improvement of harmony	Inclusivity	
	Operational strengthening	
	Project management as a core competency	
	Projectised functionality	
	Redefine governance	

Source: Author – derived from data

5.3.1 On the existence of disharmony

This part addresses the theme concerning elasticity (tension or disharmony) between the temporary and permanent organisation forms. The purpose of this

question is to establish if disharmony exists and if it is persistent in the perceptions of business practitioners.

The concern of disharmony showed to be evident, refer Table 37 - Presence of disharmony in Appendix 1. One participant suggested that disharmonies between the two forms are regular occurrences; particularly, during unique initiatives. Informal discussions held with employees and executives external to the research settings further confirmed the perception that the phenomenon exists. It is noted that when the posit of the phenomenon was proposed as a discussion point, every single person within and external to the research project expressed comparable bewilderment and curiosity as to why it is present but not resolved.

This concept addresses the participants' perceptions or reasons for the disharmony, refer Table 38 - Perception of disharmony in Appendix 1. The participants questioned that in their opinion, despite global surveys outlining project difficulties, central themes that identify cause and remedy are not forthcoming. A strong perception that emerged from all levels of agency argues that the strata of management that represent both organisation forms are not aligned. It was presented that a competitive element is productive and leads to productivity gains.

5.3.2 On the nature of disharmony

This part addresses the theme concerning the nature of this disharmony between the temporary execution structure and the permanent execution structure - project versus production. The data revealed several categories on the nature of disharmony, each with several sub-categories.

Table 33 - On the nature of disharmony

Category	Subcategory
Distrust and suspicion	Distrust amongst Executives
	Executives distrust Project Managers
	Project Managers distrust Executives
Fragmented organisation	Existence of Executive Islands
	Operational Islands
Maturity complexity	Knowledge of project management

Category	Subcategory
	Process driven
	Improper resource allocation
	Failure of Inclusivity
Leadership failure	Weakness in Executives
	Weakness in Middle Managers
	Weakness in Project Managers
Organisational failure	Weakness in Operational Support
	Weakness in Organisational Ability

Source: Author – derived from data

Distrust and suspicion

There appears strong presence of lack of trust and faith amongst the leadership, between leaders and followers.

It emerged from the participants' perceptions of the executive that there exists an internal cynicism amongst the executives at the highest level of management, refer Table 39 - Distrust amongst executives. According to the participants, the executive does not appear united in its approach to the organisation's management. The executives are perceived as disconnected from the execution groups, and leadership is claimed to be non-existent, refer Table 40 - Distrust of executives in Appendix 1. An innate cynicism is evident from the non-executive strata, that the executive has little or no effect on the operational achievements.

The executive management are accused of being disconnected from lower levels of management and being cynical of their juniors, refer Table 41 - Executives distrust project managers in Appendix 1. It further appears that a professional or conjectural envy exists of employees possessing or seeking academic excellence. A distrust of value contributed by professional or educated project managers is evident, suggesting that executives have misgivings regarding competencies of learned project managers.

Fragmented organisation

It is reported that despite efforts to establish fluidity in the organisation through co-optive management structures, fragmentation occurs, and operational

isolation exists. The executives themselves appear singularly fixated on their business focus oblivious of the needs of other executive areas that require attention or support. This culture is vertically inherited within the subsections of the business.

Ostensibly, the view is that executives do not work together towards common goals, and do not commonly align with organisational undertakings, refer Table 42 - Existence of executive islands in Appendix 1. The various operational structures are voluntarily isolated and do not collaborate towards improved efficiencies. Executives do not stimulate operational support systems to serve the business execution systems, refer Table 43 - Operational islands in Appendix 1.

Maturity complexity

Maturity in business and projects management require that common language is established at the lowest level of abstraction, overlayered with common process, and for those processes to be integrated.

It is commonly held that the executive has little or no knowledge and apprehension of project management or the value thereof, refer Table 44 - Knowledge of project management in Appendix 1. The executive further does not drive the development of project management knowledge in the business, neither within the project management fraternity or the permanent support structure. It further became evident that individuals in other occupations display a similar disinterest in gaining project management knowledge.

The organisation is strongly process-driven, where processes are rigid and not agile to respond to project variability dynamics, refer to Table 45 - Process driven in Appendix 1. Further, the basic processes are not integrated across all levels from project management to general management.

Resources are inadequately allocated to tasks, and those do not accept ownership of the appointment. Refer to Table 46 - Improper resource allocation and utilisation in Appendix 1.

Perceptions are that employees do not accept accountability for decision-making beyond their involvement. Refer to Table 47 - Failure of inclusivity in Appendix 1. Change fatigue exists, and innovation is resisted.

Leadership failure

Leadership is reported to be weak and disinterested. Distinct reluctance to take responsibility was reported across all layers of management. The executives appear deliberately removed from the business reality at the execution level, refer Table 48 - Weakness in executives. As the line management, middle management is perceived to be the business's engine. Refer to Table 49 - Weakness in middle managers in Appendix 1. Yet there is an accusation that as the buffer, they do not function effectively to integrate the executive with the working levels. The project manager, as the single point of responsibility, is often inappropriately appointed, not equipped with the required knowledge or aptitude, refer Table 50 - Weakness in project managers in Appendix 1. Further, the project manager distances himself from the very support service that he so depends on.

Organisational failure

Here is again the manifestation of operational islands in which the support entity is required to be subservient to the revenue-generating entity. Yet, that integration is not visible or tangible.

The internal support mechanisms in the organisation are not designed nor executed to support the project’s resources requirements. Refer to Table 51 - Weakness in operational support in Appendix 1. When the project requires timeous allocation of human resources, or the timeous provision of project materials, those individuals within the organisation do not prioritise the project and the project team have to wait, thus incurring delays.

The organisation has not improved its internal capabilities through drawing on previous successes and lessons learnt. Refer to Table 52 - Weakness in organisational ability in Appendix 1. Emphasis was placed on the day-to-day functionality of the support services whilst conforming to governances, as

opposed to developing agile response mechanisms to support the project teams. Regardless of the project delays caused by the support services, management are not focussed on the project team requirements, instead requiring that the project team adapts to the support services' unhurried processes.

5.3.3 On the obstructions due to disharmony

This part addresses the theme and categories of perceptions concerning the inelasticity between the temporary and permanent structures in organisations and how it obstructs the interdependence between these two environments during the implementation of unique initiatives.

Theme	Category
On the Obstructions from Disharmony	Governance constraints
	Heterogeneity between temporary and permanent
	Organisational constraints
	Process only

Governance constraints

The organisations are bound to governance in their normal operations, and to ensure sound controls to policy and procedure, refer Table 53 - Governance constraints in Appendix 1. The respondents propose that not only is the governance constraining, but the design thereof is inconsiderate to the complexities of the business.

Heterogeneity between the temporary and permanent forms

It is perceived that the two organisation forms need to be mutually subservient, yet the permanent organisation is remiss in equipping the temporary form with suitable resources, refer Table 54 - Heterogeneity between temporary and permanent in Appendix 1. The temporary organisation demands that the permanent organisation provides protection and support.

Organisational constraints

The organisation support services are not accountable to the timeous delivery of project resources, and there is no consequence management for non-performance, refer to Table 55 - Organisational constraints in Appendix 1.

Process only

It is reported that the permanent organisation does not recognise the agility requirements of the temporary organisation and assumes that processes 'are sufficient', refer Table 56 - Process only in Appendix 1. Elements of optimism bias emerge here, yet overemphasis is noted in common processes that appear only on level two of total maturity but will 'fix all'.

5.3.4 On the improvement of harmony

This part discusses the theme and categories of impressions and proposals to identify potential elements towards improvement to address the inelasticity.

Theme	Category
On the improvement of harmony	Inclusivity
	Operational strengthening
	Project management as a core competency
	Projectised functionality
	Redefine governance

Inclusivity

The respondents propose that the permanent form drives the temporary form's inclusivity and seeks integration with mutual understanding of each other's strengths and weaknesses, refer to Table 57 - Inclusivity in Appendix 1.

Operational strengthening

The respondents propose that the permanent form optimises business operations through improved systems and focussed structures, refer to Table 58 - Operational strengthening in Appendix 1.

Project management as a core competency

The respondents propose that the permanent form adopts project management as a core competency across all its resources. Refer to Table 59 - Project management as a core competency in Appendix 1. The level of knowledge is proposed to be stratified from the executive and support staff who should be at least familiar, to the project managers who are required to be experts in the field.

Projectised functionality

The respondents propose that the organisation adopts project management functionality with maturity to at least level 3, where the project management common systems and business systems are integrated, refer Table 60 - Projectised functionality in Appendix 1.

5.3.5 Conclusion: Exploring disharmony

This section discussed a series of one-on-one conversations with authoritative individuals in both the utility and the firm. The researcher has further drawn on interpretations from personal, professional career, discussions within the personal networks of associates and contemplating own readings of publications and formal literature.

From these discussions it emerged that systemic failures and the main themes plague the relationship between the temporary and permanent organisation forms are; distrust and suspicion amongst business leaders at all levels, fragmented organisation through operational silos, project management immaturity, leadership failures, and organisational systems failures. It further emerged that the constraints that impede organisations from moving forward are; governance issues, heterogeneity between the temporary and permanent forms, organisational constraints and process driven only.

The participants proposed that attention is paid to; inclusivity of resources, operational strengthening, project management as core competency and redefining governance.

5.4 Conclusion

This chapter presented data acquired from observations and discussions in the business environment of project execution, with the posit of disharmony as the focal point. Two projects were discussed, one successful and the other challenged, and interviews with experienced practitioners were presented.

The discussion in this section follows in relation to the research problem of; there exists a disharmony between permanent and temporary organisations, where the symbiosis of subservience is interrupted, potentially threatening the permanent organisation's sustainability.

It was observed in sections 5.1 and 5.2 in two very different projects; the first was that ANT's Sociology of Translation, albeit surreptitiously contributed when least expected, and that the other project was severely challenged despite having a higher level or organisational maturity. The dichotomy of success and failure begs the challenge as to what went right on one project and so blatantly wrong on the other. In section 5.3 conversations with participants in the management and the management of projects and various themes were discussed and categories arose that define the disharmony and opportunities towards improving relational contracts.

The literature review and research findings confirm that projects remain challenged (KPMG, 2019), and it is evident that the temporary and permanent forms remain disconnected (Sydow & Braun, 2018). On a project, everything must be connected in order for the project team and all its mechanisms to achieve the anticipated outcome. When that connectedness is interrupted, the organisation becomes unstable, and the projected outcome is unpredictably altered.

In contrasting the themes, their underpinning categories and data codes that emerged, the relevance of Actor-Network Theory as an organisational awareness is emphasised. This dissonance proposes mitigation for the intervention of 'translation' through 'problematisation' and 'interessement' and proposed in the

core principle of Actor Network Theory of Latour (2007) and Law (1992). In consideration of the issues that were observed and from the issues that emerged in the literature and the revelations from this research, it was concluded that a conceptual framework is required to illustrate the values and benefits of the ANT Sociology of Translation when executing projects.

The next chapter discusses the concept of homogeneity in temporary and permanent forms.

Chapter 6 A conceptual framework towards homogeneity

This chapter builds on the interpretation of the disharmony between the permanent and temporary organisation forms and presents a theoretical construct towards an improved understanding of the relational contract between the two organising forms. This results from reflections as a professional over the past 35 years, discussed as a self-ethnography of the period since 2006 and includes the formal research period since 2014.

The following discussion draws on discourses by Latour (1987; 1990; 2007), Law (1987; 2002; 2009), Sage, Dainty and Brookes (2014) and Michael (2017) to present the project organisation from an ANT perspective, with particular emphasis on the value of the Sociology of Translation. In lay terms, on a project, everything is connected in order for the project team and all its mechanisms to achieve the anticipated outcome. When that connectedness is interrupted, an organisational paradox emerges (Sydow & Braun, 2018) through the contradictory nature of the actants' simultaneous obligations to the temporary and the permanent within the same environment. Subsequently, the organisation becomes unstable, and the projected outcome is unpredictably altered.

6.1 ANT in the permanent organisation form

This section discusses the essence of Latour and Callon's actor-network theory as a recommendation for application in the permanent organisation form, with particular emphasis on the Sociology of Translation. External to the project team as a subservient organisation is the permanent organisation providing essential non-human technological artefacts to the network, typically; methodologies, processes, ITC solutions, policies, procedures, and templates. In addition to the stationary mechanisms, the permanent organisation avails human resources and non-human elements to the temporary organisation form's network. These elements are enrolled as actants, the generic form of human resources, business systems, business processes, ITC solutions and the like. The complicity of all actants in the network, to the order of the primary actor, is conditional to the durability of the network and failing which, the network collapses.

For the permanent organisation form to support the project or temporary organisation ‘actor-network,’ there are thus other or external networks in their own right which connect to the project network. Those networks also exist independently or autonomously, providing services to the project network, and can be viewed as ‘black boxes’ or, also, with outputs as ‘obligatory passage points’, where the interest is input from the project and output to the project. It stands to reason that these external networks must be durable. Where the ‘black boxes’ experience internal collapse or non-conformance, the project network is in peril of collapse.

In the typical project, the organisation’s investment authority releases a project towards implementation, following motivations by key actors towards organisational sustainability and future growth. This discussion commences at the execution release approval instant, for the project to be initiated under the project sponsor's direction and the project manager's accountability. Following the ANT parlance, the project manager becomes the critical factor in establishing the project network through the context of ANT (Callon, 1986; Latour, 1987; Law, 1992).

In ANT parlance, the owner organisation and the project comprise an integrated network, series of other networks, actors and actants, black boxes and inscriptions. These all are heterogeneous elements that are required to coexist at the will of the main actors and external networks. The organisational strategy is derived from the stakeholder’s vision and mission and that are non-human actors. The organisational operating model is the obligatory passage point through which the CEO’s network actors must pass towards the organisation’s sustainability. To that effect, the main stakeholder is then the ultimate actor, and the CEO is then viewed as the intermediary, conveying the stakeholder goals to the executive members, who are the main actors in their own networks.

The typical permanent organisation form in Table 34 is presented for discussion purposes and proposes four main actor networks aligned with the organisation’s executive objectives and a further ten smaller networks existing as action nets. These action nets are interconnected networks, each with its main actors existing

as the divisional manager or department managers. Within the action nets exist groups of actors and actants interdependent at the behest of the managers. The aims and objectives become the OPPs of each network towards which the actors and actants in the networks need to be enrolled through translation.

Being a projectised organisation that generates its revenue stream through the execution and delivery of temporary initiatives (projects), the permanent organisation form exists to control and maintain the project. To do so, the temporary organisation form spontaneously emerges as a 'network' each time a new project is undertaken.

Table 34 - Permanent organisation

Organisation Form	Actants & Networks		Aims & Objectives
	Actor Network	Action Net	
Permanent Organisation	General Management	Executive	Determination of vision, strategy & operations Strategic delivery Operation model execution
		Governance & Compliance	Policy conformance Ethics assurance
	Shared Services	Financial Management	Governance agency to policy Budget determination Accounts payable Accounts receivable
		Human Capital Services	Governance agency to policy Human capital resourcing Organisation structure maintenance
		Procurement Services	Governance agency to policy Market representation Materials acquisition Contract terms establishment
	Support Services	Risk and Resilience Services	Governance agency to policy Management of safety, health & environment Management of quality systems
		Strategic Services	Centre of excellence for; Business Improvement Customer Satisfaction Project management office Stakeholder & communications management
		Information Management	Strategise best IT practices Provide hard and soft IT systems to business Train and maintain user knowledge
		New Business Development	Co-strategise business direction Scan the market for business opportunity Transact business opportunities to projects
	Operations	Product Groups	Opportunity determination Project execution Value generation

Source: Author

6.2 ANT in the temporary organisation form

In congruence with section 6.1, this section discusses the essence of Latour and Callon's actor-network theory as an application in the temporary organisation form, particularly emphasising the Sociology of Translation. Brought forward from Chapter 1, implementing an undertaking that is interested in organisational change, an organisational value improvement initiative or any of these for a customer is assumed to be a unique event or a project. This structure is characterised by an 'assemblage' of heterogeneous elements such as; individuals, teams, systems, processes, documentation and governance under an individual's leadership. This assembly is viewed as an 'actor-network' comprising actants following the terminology of ANT. The 'actor-network' is the successful alignment of an arrangement of heterogeneous elements, all working together at the behest of the 'primary actor', the project manager.

The project management functionality is an 'obligatory passage point', through which the alignment of the actors has to pass by following the process of 'translation'.

The project's animation is viewed as a 'flat network' of 'associations', and successful delivery needs to focus specifically on the problem of network resilience and 'endurance'. While the project is progressing as anticipated, the network is intact, but the network collapses when any of the 'associations' between the 'actants' break down. A solution the industry offers to ensure such required durability is the assumption of the presence and adherence to a structured organisation, project management organisation, unique skills, support services, business systems and integrated methodologies.

Although ANT proposes a 'flat network', it must be noted that within a project 'assemblage', actors are composite members comprising networks, macro-actors are institutions, and micro-actors are individuals. Teams exist within teams with varying authority and accountability. To effectively align the heterogeneity of the actants in a project, and as a key driver for learning to take place in an

organisation, the team members have to ‘learn’ how to perform a project and equally, a project needs to ‘learn to be managed’. From this phenomenon, a dichotomy occurs, and a paradox develops from simultaneous evolvement where two equally foreign entities momentarily merge towards a common goal. This is a highly complex occurrence where two opposite ends meet but must come together harmoniously. The means to establish harmony is suggested to adopt ANT as a theoretical approach and, specifically, the tenets of the Sociology of Translation.

These heterogeneous elements must come together to form a landscape of ‘obligatory passage points’ that are not only the successful association of networks but also defined outputs towards other interconnected events. The project outcome itself is the ultimate ’obligatory passage point’. This entails that humans and non-humans are released from their usual loci in the permanent organisation form to become ‘enrolled’ in the network of the temporary form, through the process of ‘translation’, meaning that the regular functionality of the actor from within the permanent organisation is refocussed on the common purpose of the project. For the project network to ‘stabilise’, the project sponsor is viewed as the ‘precipitating actor’, standing behind the project, while the steering committee members are other actants interested in the project.

The typical temporary organisation form in Table 35 comprises six actor networks aligned with the sponsor’s project manager objectives, and a further seven smaller networks exist as action nets. These action nets are interconnected networks, each with its main actors as divisional or department managers. Within the action nets, groups of actors and actants are interdependent at the behest of the managers.

Table 35 – Typical temporary organisation

Organisation Form	Actants & Networks		Aims & Objectives
	Actor-Network	Action Net	
Temporary Organisation (Managed by the project manager)	Project Manager	Project Delivery	Policy implementation Executive liaison Project implementation planning Project human capital resourcing Project plant and materials resourcing Project reporting Project execution to scope, schedule & budget Project handover to client Project closure
	Construction Manager	Site Activity	Site safety Materials sourcing Execution of scope to schedule Progress information
		Project Supervisor	Work teams leadership Works progress terminal tasks to completion Defects management Quality management
	Project Planner	Time Controls	Work breakdown structures & dictionary Experts liaison Work sequencing Schedule development Schedule monitoring Progress reporting
	SHE Officer	Safety, Health and Environment Assurance	Regulatory compliance Safe conditions
	Quality Manager	Quality Controls	Establishment of quality metrics Conformance of metrics assurance Conformance and deviation reporting
	Administrator	Works Administration	Records keeping Meeting schedules Communications flow

Source: Author

Team members' interests must be redefined to adhere to the behest of the project manager or the 'spokesperson'. Not only the human project team members are 'enrolled' into the project by the project manager or the sponsor through the process of 'translation', but all non-human elements are similarly enrolled as 'actants' and authorised with equal 'agency' as human actors. All these elements are then regarded as actants with equal standing and analysed accordingly. Successful 'translation of the project resources is obligatory because it forms the core of the network stability and projected outcome.

Human actors gather at various functions and ratios during steering committee meetings, technical meetings and progress meetings as ‘centres of calculation’ where project documentation is condensed and merged into new and richer inscriptions. Project management methodologies and controls are effected through the processes as ‘inscriptions’, which expedite regularity amongst the actors in the network. These devices become ‘immutable mobiles’ amongst the actants through ‘intermediaries’ who establish the standard practices towards consistency.

In ANT parlance, the project as the temporary organisation comprises an integrated network, a series of other networks, actors and actants, black boxes and inscriptions. These are heterogeneous elements required to coexist at the will of the main actors and external networks. The project strategy is derived from the customer’s project goals, and these are non-human actors. The project implementation plan is an obligatory passage point for the project manager’s network actors to pass towards the project deliverables. To that effect, the project manager is the ‘ultimate actor’, and the portfolio manager is then viewed as the ‘intermediary’, conveying the stakeholder goals to the project team members, the main actors in their networks.

6.3 Theoretical contribution – Conceptual framework of temporal fluidity

Figure 19 outlines the permanent and temporary forms in the firm as actor networks. The Dichotomous Paradox is revealed as the manifestation of disharmony, where effective temporariness and disruptive disharmony coexist during a unique initiative. In anticipation, the temporary organisation form as the project is established and driven to enrich the permanent organisation in symbiosis and in response to its unique demands, the permanent organisation potentially responds with betrayal.

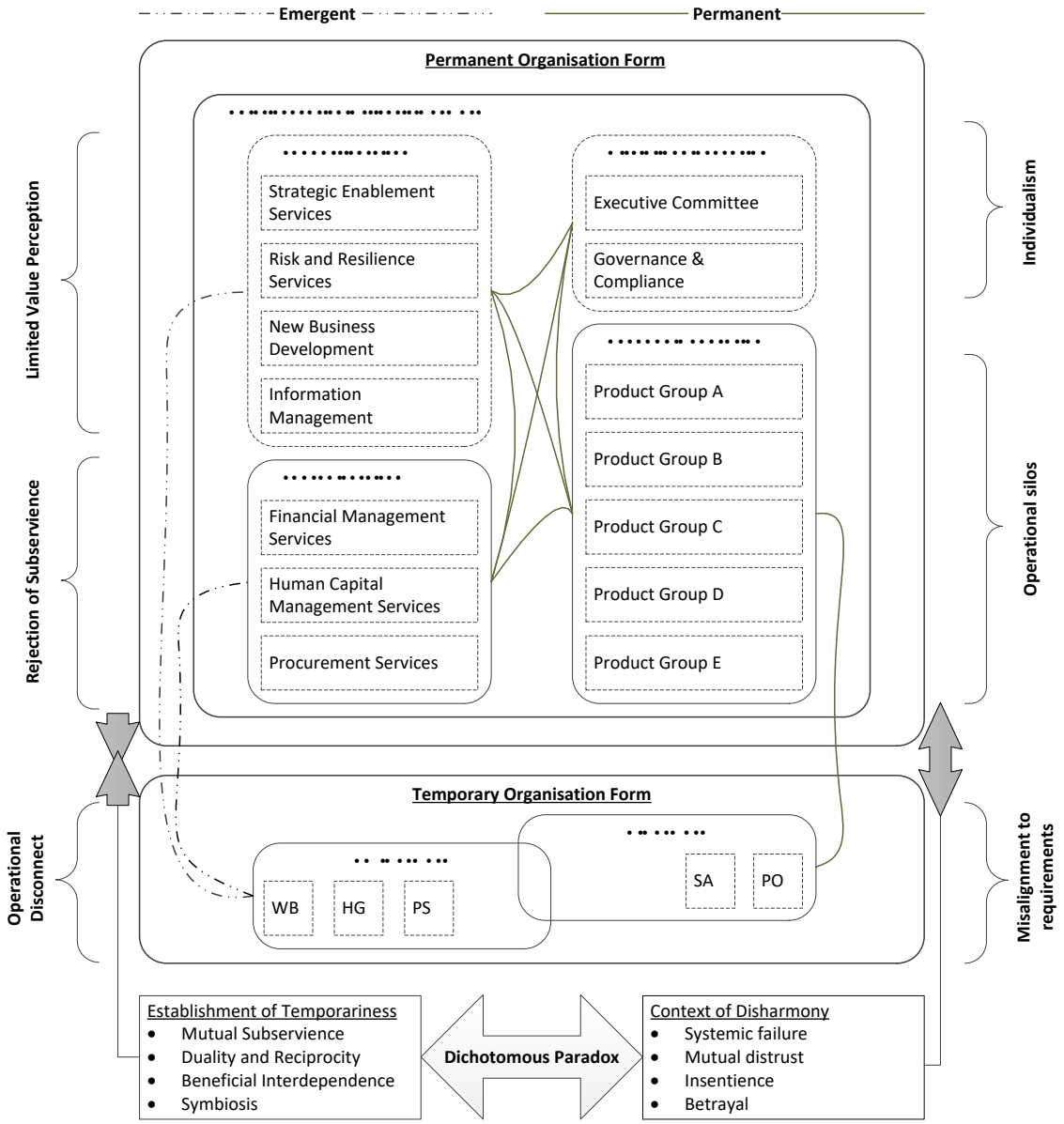

Figure 19 – Manifestations of disharmony

Source: Author

The networks are stable within the permanent form and when projects are not in progress. This may also occur during a project, subject to the complexity and unpredictable change. Due to the repeatable and predictable culture of the permanent form, the managers, as the owners of each action net, are long-term employees, and business systems are well established. Business meetings are undertaken regularly, organisational progress and performance are debated, and topics of concern are contemplated. The managers of these groups are the main

actors of their networks and ensure through the translation process that each actant remains successfully mobilised.

The permanent and emerging (temporary) networks are required to function contemporaneously during the operation of the emergent network. After the project, the temporary organisation is dismantled, and the actors return either to their regular place in the permanent organisation, or are redeployed into a new temporary network. Thus, in permanence, there exists temporality, and in temporality, there exists permanence. It can be deduced that a moment of inelasticity occurs when these competing forces become destructive rather than establishing balance.

The permanent networks and the habits of the actants within the permanent form are regularly consistent with decidedly predictable and repetitive behaviour arrangements. Organisational cultures are routinised during usual daily operations. To execute the unique or temporary initiative, actors and actants are seconded or redeployed to the temporary form. This entails a departure from their regular habit and habitat where daily tasks occur with predictable and consistent frequency, but now a new form of chaos and unpredictability emerges, and they have to cope with that. The new team may experience new external resources with their agendas, views of permanence versus temporariness and unique habits. The temporary environment is alien to the regular routines and places significant stress on the new team, for whom, to progress, a new and durable network must be established.

At the termination of the temporary initiative, these resources eventually return to their usual loci of habitat and habit to re-integrate with the resources and environments that have betrayed them during their temporary behaviours. On their return, they still possess some of the habits of the temporary form’s agility culture. They now need to be translated again by that manager in the permanent form to abandon their recent agility and conform to the permanent, predictable and repeatable governances. Internal conflicts and paradoxes arise not only within business systems but also within human resources.

It must be noted that the conventional predisposition of human resources, business systems and compliance requires an obviousness and inevitability in the collaborations amongst human and non-human actors towards ultimate control and ‘durability’. The ‘action nets’ in the permanent organisation intend to accomplish strata of sophistication that disentangle heterogeneity amongst the ‘actors’ in both organisation forms through ’convergence’ and the development of ‘scripts’. In ‘centres of calculation’ and through ‘composition’, these ‘scripts’ are advanced, which are anticipated to accomplish homogeneity. The resultant standardisation resists uncertainty, heterogeneity and ‘betrayal’, effectively becoming ‘black boxes’ independent of connected networks and relying on receiving inputs from and delivering outputs to other networks.

This notion insists on absolute control which rejects innovation and ambiguity, the latter two of which are the foundational elements of undertaking unique initiatives. This phenomenon presents both dichotomy and paradox, which is an inherently unstable platform. Minor alterations may mitigate the instability and establish ultimate control, yet if the control mechanisms are assertively utilised, the inherent instability returns in magnitude orders of what existed at first. Thus, absolute control over the project or network may not be established, but the inherent elements causing instability can be managed with finesse and small increments. Betrayal is inevitable and continuous. The main or precipitating actors are required to constantly observe deviations in the actants and external recruiters and procure the problematisation and interessement activities of the sociology of translation to ensure continued enrolment of the actants.

Therefore, this requires particular attention in the process of ‘translation’ to align the actors in the permanent organisation forms within their new actor nets, and to do so through multiple interventions. The leaders as the network owners in the permanent organisation form exhibit the qualities of control and uniformity to ensure the continuation of predictable production-associated actions. This tendency assembles the entire permanent organisation to become a ‘black box’ and remain so throughout the project. It is further suggested that the very nature of the permanent organisation, with its characteristics and attributes of

organisational learning, will continue to fluctuate during the project and, at completion of the project, will have introduced some change to its permanent form.

Projects being unique initiatives present unfamiliar networks cultures to the permanent organisation. The temporary organisation emerges with its own action nets where both human and non-human actors are anticipated to cohabit in synchronicity at the behest of the project manager who is the main actor. These actors originate from the permanent organisation, or are outsourced from external entities, where they were members of other networks with their own unique cultures. In response to the anticipated project outcomes, actors with unique and heterogeneous characteristics are assembled and connected towards the project's directive. As the main actor, the project manager is thus challenged to ‘translate’ each actor and act towards successful ‘enrolment’. A new familiarity is required amongst the ‘actors’ that require ‘translations’ towards the specifics of the ‘heterogeneity’ of the project. In contrast to the permanent organisation form, the nature of the regular routines undertaken by ‘actors’ in the temporary organisation action nets demand flexibility and agility to respond to the projects and changing requirements.

From personal experiential observations, the following final categories emerged, classifying the context of disharmony;

- Limited value perception.
- Individualism.
- Rejection of subservience.
- Operational silos.
- Operational disconnect.
- Misalignment to requirement.

From this research project, the following tenets of the research problem were revealed:

- The permanent form arrives with its own inherent business dynamics and resistances to other practices.

- The temporary form arrives with its own novelty, agility and unpredictability.
- When these two intersect, the Dichotomous Paradox emerges with its own tenets of divided interests, obscure agendas, pertinacity and misperception.
- Then, as the work events progress, the disharmonies emerge with its own tenets of systemic failures, mutual distrust, betrayals and insentience.
- The durable network must exist with its tenets of symbiosis, mutual subservience, duality and reciprocity and mutual interdependence.

The theoretical contribution of this thesis is presented in the response to the above and the final sub-question, as discussed below. The final sub-question, which is the real purpose to the outcome of this research;

> *'What mechanisms are likely to enable harmony to encourage coalition of the temporary and permanent structures?'*

Figure 20 presents the final social contribution of this research, which is submitted as the 'Conceptual Framework of Temporal Fluidity' to be applied during the management of temporary organising. The emphasis of the framework is the continued focus and reciprocating application of Latour and Callon's Sociology of Translation, to moderate the disparaging effects of the dichotomous paradoxes that lead to the disharmonies between the temporary and permanent organisation forms, during the initiation, planning, execution and closing out of unique initiatives.

The precipitating actor, or the single point of responsibility in project management parlance, is required to unendingly and unerringly attend to the allegiances of the actants in the networks, to maintain durability of the network. The problematisation initiates the potential actor to be better understood and what adjustments and redirections are required. Then, through interessement the actant is prepared to be enrolled and finally, mobilised. However, it cannot be

assumed that once actors are enrolled, that this will become the status quo of the project.

It was observed in the researcher's experiences, and in the literature, that actants, be they human or material semiotic, become distracted or elsewhere recruited during their tenure of any network at the time. This distraction culminates in betrayal of the main actor and the network. The relational contract between the actant and the principal or main actor must always be maintained. This places a significant responsibility, and commensurate stress, on the main actor, to not only predict and expose potential betrayals but to shield the network and it's actants against external recruiters.

It is proposed that the ANT Sociology of Translation is an obligatory passage point as depicted in Figure 20 for the project manager as the main or precipitating actor to first establish and then maintain the durable network towards the successful project as the social contribution.

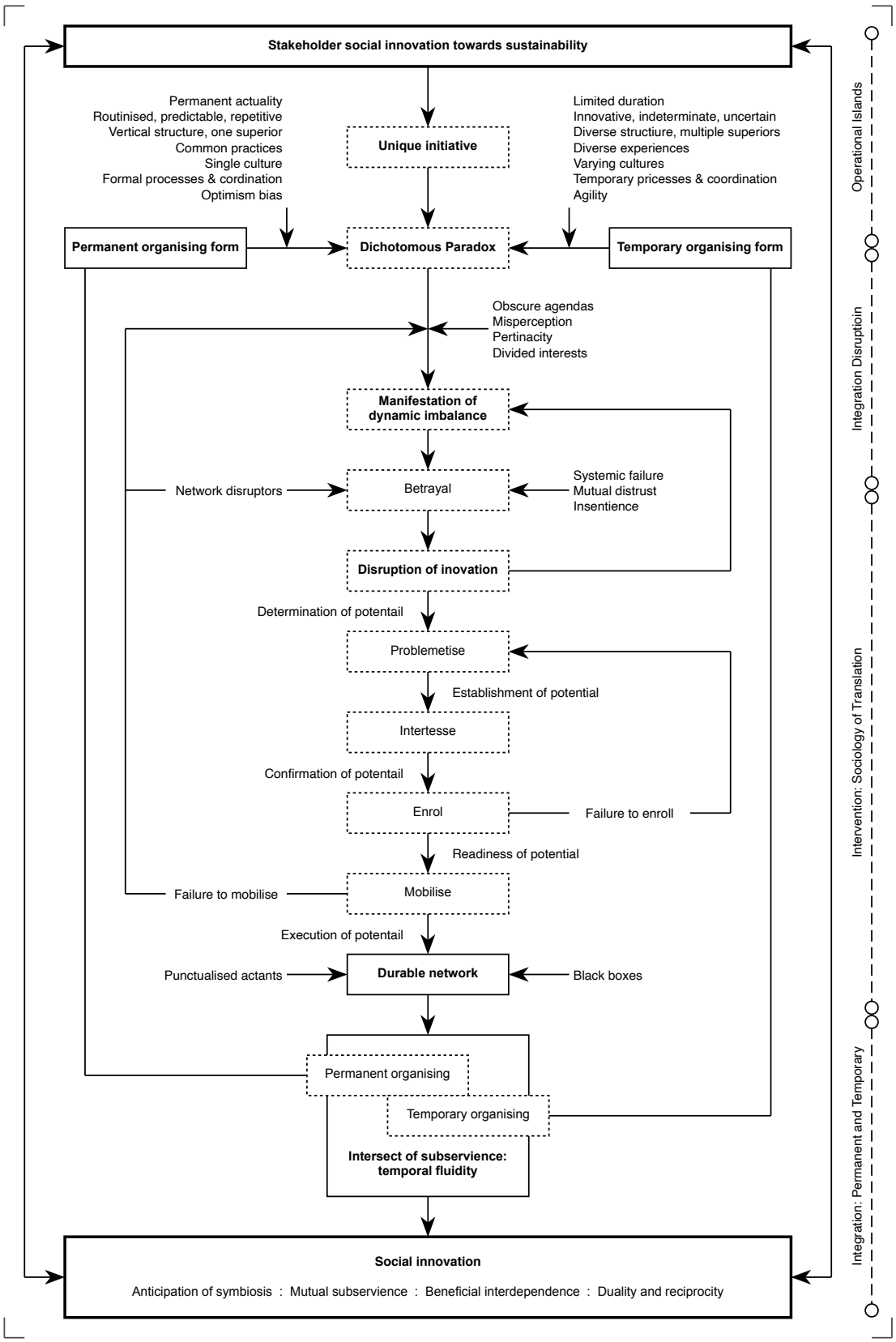

Figure 20 - Framework of temporal fluidity

Source: Author

6.4 Conclusion

This requires that the leading actor of any network continually remains committed to the actants in other networks that he is a member of. Whilst ANT prescribes it's networks concepts as a 'flat hierarchy' business realities entail that main actors of networks are subject to hierarchical power, and may become subjects of betrayal themselves when more powerful actors execute their preferences, leading to dichotomous paradoxes during and prior to the project initiatives. The Sociology of Translation and the persistent practice thereof is proposed as the moderator in Figure 20 to mitigate the continued destabilisation effects of disharmony and effectively lead to the social innovation. Refer to Section 7.2 which discusses recommendations on the expansion of the Conceptual Framework of Temporal Fluidity in Figure 20 towards application in organisational practice.

Chapter 7 Conclusions and recommendations

As an ethnographer, the researcher discussed the “lived-in” experiences and observations as a project and business management professional in this research. This included reflections on the literature and on discussions with practitioners and interested and affected parties. As a professional, the researcher has participated in developing and implement organisation structures, practices mechanisms with tools and techniques, and observed others do the same in both practice and literature and yet the problem remains persistent; projects are challenged. Despite the efforts observed in practice and research, the issue remains unresolved and deserves continued research.

Both the permanent and temporary organisation forms exist, and they have an increasing presence in organisations across the industry, regardless of their primary deliverables or client base. The relationship between project management and temporary organising remains problematic and there exists an apparent corresponding dilemma where the permanent organisation has trouble integrating the project management functionality.

There is a limited value perception from the temporary organisation that the permanent organisation support systems are restrictive. The permanent organisation’s most authoritative functionality does not freely integrate. Whilst the support functionality is required to be subservient to the temporary form, they attempt to dominate the project teams. Inversely, the project teams must be subservient to the permanent organisation form as an end user, yet, they attempt to dominate the circumstances under which projects are executed.

The operational silos and organisational disconnect are thus pervaded in the business, where interests are privileged over the holistic organisational aspiration. And, finally, the teams in the temporary form become misdirected to the ultimate goals, and alignment to requirements is compromised.

The persistent pursuit of the ANT activities of the sociology of translation (Table 36), specifically ‘interessement’, could mitigate the legacy evolving of operational islands.

Table 36 - ANT Sociology of translation

Concept	Definition
Problematisation	The first moment of translation, during which a focal actor defines identities and interests of other actors consistent with its own interests and establishes itself as an Obligatory Passage Point, thus rendering itself indispensable.
Interessement	The second moment of translation, which involves negotiating with actors to accept the definition of the focal actor.
Enrolment	The third moment of translation, wherein other actors in the network accept or get aligned to the interests defined for them by the focal actor.
Mobilization	When one solution gains wider acceptance and a larger network is created.

Source: Rivera González, Cox, and Flores Zambada (2012)

7.1 Conclusions on the aim of the research

This research set out to explore the disharmony between the two organisation forms of temporary and permanent; where integration is required to further the business objectives.

The research aim was:

> *‘To explore the extent of mutual subservience between the permanent and temporary organisation types, to the project management environment during the organisational change or unique initiatives through implementing projects.’*

A qualitative research approach with ethnography was adopted as the strategy. Ontologically and epistemologically, the researcher was grounded as a critical realist researcher and, axiologically, was deeply immersed in the research setting.

With reference to the key research question:

> *'Do disharmonies exist between the temporary and permanent structures in organisations that impede the interdependence between these two environments, during the implementation of unique initiatives?'*

A thorough review of the literature was conducted, personal observations were analysed, and, discourses with experienced and knowledgeable experts were conducted. This led to the research confirming that the posited disharmonies are persistent during the undertaking of unique initiatives.

Regarding the research sub-question:

> *'What is the nature of the disharmony between a temporary execution structure and a permanent execution structure - project versus production?'*

The disharmony is rooted in a dichotomous paradox which emerges during the undertaking of unique initiatives, where the actors of both the temporary and permanent organisation forms betray the main actors of the project networks, leading to the breakdown of durable networks.

Regarding the research sub-question:

> *'What mechanisms are likely to enable harmony to encourage a coalition of the temporary and permanent structures?'*

It is proposed that the Conceptual Framework of Temporal Fluidity (see section 6.3) in Figure 20 will support management teams to better understand the importance of Callon and Latour's Actor-Network Theory as contributors to business management systems and cultures and, with specific reference to the Sociology of Translation.

7.2 Recommendations

The research enlightens the reader that temporary and permanent organising are mutually interdependent, but that further organisational management

mechanisms are required. An absolutist approach to managing disharmony can be counterproductive and if managed from an absolute perspective, it can be destructive. This approach can lead to disregarding the residual element required for initiating change, which ultimately results in undesirable outcomes when attempting to mitigate the phenomenon.

It is noted that unbridled disharmony cannot exist and therefore, it is recommended that Actor-Network Theory's Sociology of Translation is adopted as a continuum to mitigate deviations of the actants that can lead to betrayal and subsequent destruction of the stable network. Whilst this perspective is not a panacea to the problem, it is anticipated to improve the understanding of the various critical players on projects and provide mechanisms to continually pay attention to external factors that may seduce these key players from their allocated tasks.

The Conceptual Framework of Temporal Fluidity is specifically useful as a perspective for future researchers and organisations as a basis to develop measurement and conformance solutions. In support of the various maturity models, further development is enabled in exploration of the level of the dichotomous paradox towards determining the organisations' readiness prior to embark on projects, and translating key actants in both organising forms. Within parastatals under control of national governments, onboarding of politically appointed authorities is suggested to mitigate the dynamic imbalance. It is noteworthy that the external stakeholders be perceived as permanent organising forms, network disruptors and specifically, scorecards can be developed to determine these during the risk profiling of the project. The durability of the network establishment with the efficacity of the punctualised actants and black boxes can have its own performance measurement matrix and managed proportionally.

It is recommended that the management of the dichotomous paradox through the proposed Conceptual Framework of Temporal Fluidity not be limited to what is termed as 'projects' only but that the organisation evolves project management

as fully integrated into the business, and that there evolves a singularity with no differentiation between temporary and permanent management. Towards effective social innovation in business, it is proposed that the following be attended to;

- Effort is made to improve maturity through the management and to embed the mechanisms of the management of projects in organisations.
- Through training and mentoring, the sociology of translation becomes a core competency of all managers in the organisation.
- Business processes must be developed to embrace the sociology of translation and 'translate' to be continually practised and punctualised.
- That the sociology of translation be a behavioural contextual competency in the project manager's human resources management framework.
- That awareness of required processes and definitions of weaknesses is revealed through effective sociology of translation.
- That, when the tenets of the dichotomous paradox and the disharmony emerge, sociology of translation is the moderator to reduce and mitigate the destabilisation of the network.

7.3 Social contribution

This research contributes to the general body of knowledge in the following manner:

Theoretical – A theoretical contribution is made to the project management theory through an improved understanding of disharmony and the emergence of the dichotomous paradox between the temporary and permanent organising forms.

Social – A social contribution is made in the presentation of the Conceptual Framework of Temporal Fluidity and its utilisation of the ANT Sociology of translation as a moderator of the disharmony and dichotomous paradox that emerge during the execution of unique initiatives.

Practical – A practical contribution is made in the Conceptual Framework of Temporal Fluidity to be utilised as an underpinning instrument for organisations to design business mechanisms to mitigate the emergence of the dichotomous paradox.

The main contribution of this thesis is the theoretically grounded description of the interplay among the various actors in projects on both sides of the organisational spectrum, the practical application of the "ANT Sociology of Translation" to the problem, and the recommendations for practice. This allows to derive not only essential conclusions for the project management discipline, but also valuable advice for the successful execution of comparable projects in South Africa.

7.4 Future research

The disharmony between the temporary and permanent organising forms remains a persistent problem and requires further research.

It is recommended that future research continues to focus on:

- The application and value of the ANT Sociology of Translation as an enabling mechanism to bond organisational resources.
- Adopting project management as a core functionality with a particular focus on the permitting authorities within organisations.

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Appendix 1 - Interview data

Table 37 - Presence of disharmony

Participant	Supporting excerpts
Participant A	Definitely disharmony yes.
Participant B	Disharmony most definitely does exist.
Participant C	There has to be disharmony between permanent and temporary, there always has been and there has to be because in any environment we are doing something where there is a start date and an end date typical project environment.
Participant D	Absolutely yes.
Participant E	Definitely.
Participant G	Definitely. They are an ocean apart.
Participant H	I have seen it everywhere in my professional life.

Source: Author – derived from data

Table 38 - Perception of disharmony

Participant	Supporting excerpts
Participant A	The Chaos, KPMG, PWC reports present poor project performance but none explain why? And none propose improvements. I look at those and I put them all together, the similarities are frightening and yet, what do with do with it?
	The permanent/temporary organisations, they don't sing from the same hymn sheet; quote!
	The temporary come from the permanent environment, that's why I'm saying the challenge is now we look at the temporary environment. The mind set in a project organisation differ from the permanent organisation.
	The way they approach things, the way they approach challenges, the way they approach the planning you can immediately see the terms of schedule control, because operations and maintenance have got time on hand. In the project organisation we don't.
Participant B	Both the permanent and the temporary sides have different objectives, and because of these different objectives you get friction between them.
	I don't think executive management even know what a project site looks like or what a construction site looks like, I don't think they have taken the time.
	I think a lot of people say they understand each other, but in reality 'NO' they don't understand it, they don't understand the bigger picture.
Participant C	It is necessary to bring your sources in before or on the start date and release them after and any resources coming into an environment. That kind of environment has the inherent internal issue of almost self-denial that this is their responsibility.
	You second somebody to know their job. It is a dangerous thing to do in the permanent organisation because how much ownership does the seconded take for that job?
	You take someone out of the permanent organisation and put them into the temporary organisation then you've got big disharmony and you've got lack of ownership.
Participant D	It is left up to the project environment to provide what they think is required so very often there's tension between the permanent organisation and the temporary organisation.

Participant	Supporting excerpts
	The permanent organisation is meant to provide guidance, strategy and support services to the project environment so that the project environment can perform but in our environment, most of that is missing
Participant E	The people in the temporary organisations are so frustrated by the lack of support from the permanent organisation, now they start working against the business without them even knowing
	The two forms need each other. Now without this temporary organisation there is no permanent organisation
Participant F	The Project Managers are seen as more glamorous, they get more benefits, more salary, more market premiums they kind of have more freedoms. There is a professional envy by others
Participant G	There should be a little bit of a competition element between projects and between product groups etcetera that makes sense
Participant H	There is always tension between the priorities of the project environment and also of the permanent operational environment; I saw it everywhere I worked.

Source: Author – derived from data

Table 39 - Distrust amongst executives

Participant	Supporting excerpts
Participant A	Here is the urgency in the permanent organisation is not the same urgency in the temporary organisation based on they do not understand the permanent environment.
Participant C	If you were the MD of your own company there's no ways that the board would be dictating to you how to achieve success, you meet your targets or you don't. So in these organisations I have seen it these there's huge confusion often at executive level and that confusion has to by individual executives be translated into a clear process so that he can manage the business that he has to. It brings a lot of confusion.
	So it is very, very difficult, earlier before we discussed this, we were talking about the principals of bringing 5 diverse companies together or, divisions. Imagine the types of conflicts you have, not only in the executive but even further down, you are trying to standardise for instance these grade issues and grades and the tasks are set up as I talked about complexity and not volumes.
	When you have divisions of different sizes, some with more employees than others and some with much bigger turnover than others, you cannot have the same level of persons. They are different, have different paygrades and operate at different levels. But, they sit on the same executive committee.
	The executives get mixed signals. They often they can't manage because in the executive meetings the senior executive holds them accountable as CEO's of their own company, and should take MD decisions but then the same top executive lambastes the executives for not following support services tasks which they should never get involved with in the first place.
Participant E	Junior Management has no understanding. The junior management which resides in the temporary structure, they don't understand anything of the permanent structure and they don't want to understand.
Participant H	I think there is some red tape in terms of that distrust between the executive.
Participant G	The resources would put the needs of the temporary project ahead of the permanent organisation.

Source: Author – derived from data

Table 40 - Distrust of executives

Participant	Supporting excerpts
Participant D	There's no support from our executive E-band manager to support our projects and there's no integration with him into the management
Participant G	If you take Rexco away and if you empower the middle managers you will have a better organisation
Participant H	The executives and middle management are not connected
	The project manager does not trust the executive

Source: Author – derived from data

Table 41 - Executives distrust project managers

Participant	Supporting excerpts
Participant C	The point that I am making is that in the industry where so many project managers are required because there are so many of these projects, whether they are Greenfields, or whether they are semi-permanent or semi flexible in a permanent structure, the process that I have found that works, because I have had all of them and the academics have not lasted long.
	I acknowledged that I underestimated you and I underemphasised your technical experience in our discussions. You have huge experience of project management and always I focus less on the academic and I will to my dying breath. I mean even what you are doing now it is huge academic.
Participant D	Lots of overruns due to procurement and then disharmony with the permanent organisation, because it's perceived that the project environment or the project management organisation is not performing.
Participant F	Maybe get some of the people who are stuck in their four by four offices to get out onto the field and get some experience. Walk a mile in the shoes of these other people and vice versa
	Project Managers have huge responsibilities, huge accountability, many people might see them as being able to go to where then want to when they want to, coming with that is great accountability and so the permanent work that is stuck in the office like this, kind of has a great amount of jealousy about what's happening there.
Participant G	They (Rexco) only speak to each other no-one below them. They go to the same functions where they only discuss what they want to hear from each other.
	Yet the culture in the organisation is you cannot do anything on your own you have to have approval.
Participant H	The executives don't trust the project manager.
	The executives and middle management are not connected.

Source: Author – derived from data

Table 42 - Existence of executive islands

Participant	Supporting excerpts
Participant A	A risk we have identified is a promise is made by the permanent organisation on behalf of the project organisation to deliver certain things and there is not interaction of a forewarning system by saying the early warning by saying guys this is the dilemma we need to face it when we get there and that we don't see.
	Executives promise things to external parties without involving the project manager.

Participant	Supporting excerpts
	Executives promise things to external parties without involving the project manager.
	The executive does not have the attitude required to make project management a core competency.
	The project strategy and planned outcomes by the executive and the project manager's project plan are not aligned.
Participant C	So that brings a lot of conflict between the permanent and the temporary types of organisations and again the only way that we have managed to deal with it is to actually get the permanent or part of the organisation to understand that they are responsible for the temporary part.
Participant D	On the oil plant, the construction services executive was antagonistic and not at all supportive. Our divisional executive was also not engaging at all. He was passive in his responses and the senior executives were demanding of the reasons why the costs were overrun and the financial management was questioning continuously.
	The CFO and the CEO, specifically the CEO, wanted to know what, why the project was running late, but we did not have any response from our CFO when the matter was raised to him.
	They don't support it, only report on it and ask questions as to why it doesn't perform or does perform, but very little participation in empowering it
	They like to talk about it but they do not get involved, they manage the permanent operational processes and the temporary project environment is very much dealt with as a separate issue, just reporting on it
Participant E	Now the HCM Head of the organisation is currently working on CAP9000, but the construction head has got a mandate to grow the business to be a construction company of the big five.
	The Executive Management of the company only understands the permanent organisation and they are so negative, they don't support the temporary organisation
Participant G	However now all the focus of the executive management is suddenly put onto the temporary project to the detriment of the other parts of the permanent organisation or operations because there's inevitably secrecy around this.
	The organisation is run by the middle management not by the senior management.
	The senior manager group actually stifles the organisation massively.
	There is an issue with procurement well we're told the head of procurement to sort it out so case closed.
	There's no communication from the executive to the permanent organisation about what the strategy directive is or objective is of the temporary project.

Source: Author – derived from data

Table 43 - Operational islands

Participant	Supporting excerpts
Participant A	Silo mentality, turf protection, and the lack of ownership. I can tell you now one of our biggest challenges in the organisation integration management. We don't get it right.
Participant C	Because we tried the reverse and the reverse doesn't work because the nature of the site manager does not lend himself to the project type of management and decision.
	So it is very, very difficult, earlier before we discussed this, we were talking about the principals of bringing 5 diverse companies together or product groups, divisions, call it what you want. Imagine the types of conflicts you have, not only in the executive but even further down, you are trying to standardise for instance these grade issues and grades and the tasks are set up as I talked about complexity and not volumes.

Participant	Supporting excerpts
	So that brings a lot of conflict between the permanent and the temporary types of organisations and again the only way that we have managed to deal with it is to actually get the permanent or part of the organisation to understand that they are responsible for the temporary part.
Participant G	Rexco. Technically they're the management structure of both the temporary and permanent forms however I do not see them belonging to either.
	They always go to the same functions and it gets frowned on if one excuses oneself from an event so they literally move around in a pack and they never get to interact with anyone else.
Participant H	Silo mentality between the procurement people and the project organisation

Source: Author – derived from data

Table 44 - Knowledge of project management

Participant	Supporting excerpts
Participant A	If you are in procurement, you have to have basic knowledge and understanding of project management to support the project environment, that's the only way you can do it because then you will understand the dynamics within a project the data constraints the money constraints, all of that, but now if you do not even understand your own job now you need to support a multi-million rand project, there is a huge discredit.
	Now unless they understand the dynamics there. How can you write a policy to prescribe to these guys, you see those challenges that we face. We need to get the permanent organisation and the support structures to the temporary organisation to understand Project management.
	People allocated to support projects from a procurement side not understand the project, they do not understand the project
	The project strategy and planned outcomes by the executive and the project manager's project plan are not aligned.
	Typically what happens when you ask someone now what's a WBS they go to the finance side and say there is a WBS number. So they don't understand the very basics of project management.
	You see coming back the permanent organisation does not understand the dynamics of the project organisation or the temporary organisation
Participant B	The permanent organisation has a view on how soon things should be done, and the project managers believe it can't be done. 'It takes 9 moths to give birth to a baby, you can't have one baby per month with 9 women if you start simultaneously.'
Participant C	A typical world is where project management is always seen in my view in the industry as the purest form which is the IT type environment as opposed to over the last few decades where project management is being something applied to any kind of industry.
	And probably the best way to bring that about if we look first of all just at the project manager, is this issue of do you need a pure project manager
	But the point that I am making is that in the industry where so many project managers are required because there are so many of these projects, whether they are Greenfields, or whether they are semi-permanent or semi flexible in a permanent structure, the process that I have found that works, because I have had all of them and the academics have not lasted long.
	I acknowledged that I underestimated you and I didn't underestimate at all I underemphasised in our discussion your technical experience. Your experience of project management and always I focus more on the academic and I will to my dying breath I mean even what you are doing now it is huge academic. Even your vision of what to do in your retirement age in terms of a professorship and those kind, and that's academic and I've always perceived you as a really strong academic person.

Participant	Supporting excerpts
	So I think one of the ways and coping with that flexible environment is to become very process driven.
	There have been guys who come through who have done strong project management courses who have really applied the knowledge and then got into the issues about theory of constraints and a whole lot of issues but they have really battled in our environment to be good project managers. And then you've got guys who really haven't had a lot of project management skills but they're running good projects, why?
Participant F	Project managers are very agile people, self-managers with unique skill sets, I think it's hard to actually teach people that.
	Project managers don't need to have multi layers of bosses, they self-manage and that's why they either succeed or fail, they either succeed spectacularly or fail spectacularly, it's about self-management skills.
Participant H	if the environment is supposed to be projectised and then it is not then the project management culture does not exist within the organisation
	Most other people do not actually upskill themselves to actually do projects
	Support Services do not know enough about project management and PM does not know enough about SS work

Source: Author – derived from data

Table 45 - Process driven

Participant	Supporting excerpts
Participant C	One of the ways certainly in our environments that I found is the best way to deal with that is to be very process driven rather than individual driven. So that you are running projects not because you've got the best project manager but because any project manager is working to a process.
Participant G	New business will never ever succeed because we are not flexible because in our lives it's more important to follow a process than to actually get the work done

Source: Author – derived from data

Table 46 - Improper resource allocation and utilisation

Participant	Supporting excerpts
Participant A	In most cases projects do not have the necessary resources so they have to source in, in a large percentage of the time they source it from the permanent organisation, they have got other responsibilities other focus areas.
	In some cases people that are allocated to projects may not necessarily be the person with the right profile let me call it a profile and that poses a problem, I just have to go to procurement for instance.
	The way of our approach towards capacitating our in-house people is lacking, we are immature in matching the role to the requirement, and then selecting the right person for the job.
	We developed a PLCM but the people presenting it do not really understand the process and neither do they understand project management.
Participant C	Might have separate individuals as far as I am aware and the experience over the years, you have to be very careful of the individual type before you second because if you don't get the right guy you are neglecting ownership.

Participant	Supporting excerpts
Participant G	it's about the resources that gets allocated to the temporary aspect of the organisation which by default skews the working relationships between temporary and permanent organisation.
	When a strategic project or a strategic initiative gets approved your executive level take their own best resources and staff the initiative with those people thus weakening the permanent organisation.

Source: Author – derived from data

Table 47 - Failure of inclusivity

Participant	Supporting excerpts
Participant B	My view is if you have a permanent organisation or a temporary organisation both should have this channel up into Exco and into board to say from a permanent point of view these are our risks
Participant G	The only people that's going to buy into it is the people that was part of it.
	The rest of the people are by default going to exclude any decision that comes from there because they weren't involved.
Participant G	The change is forced upon the permanent organisation who dismissed it long time ago and that's why the change isn't working.
	This top down approach on a strategic level gives you a plan it never gives you an implementation, if you add to that the pure resistance of the people that's never been involved in it then you never ever going to have any change ever.

Source: Author – derived from data

Table 48 - Weakness in executives

Participant	Supporting excerpts
Participant B	I don't think we have people sitting at the Investment Committees and at EXCOs who are asking the right questions.
Participant D	The PLCM is a policy yet even the CEO does not demand it be used or conformed to.
	The project is the temporary organisation. The biggest problem is that the executive doesn't acknowledge the PLCM and gives it token support but is not committed to enforce it in the business.
	We also have a problem where the sponsors within our organisation are just not more involved in the projects
	We pointed out to the CFO (the sponsor) that we were unable to control the construction services processes and asked for him to intervene to ensure that they complied with the project, the basic project management requirements of schedule cost estimates and execution management to ensure that we met the targets. He told us it was our problem and don't call him back, we must manage it.
Participant E	At his point in time the permanent organisation is ignorant of the struggles, needs of the temporary organisation and hence the decline in clients satisfaction, execution performance of the projects and profitability
	The executive only shows a limited appreciation that the revenue comes from the temporary organisation form
Participant G	For example how long have we tried to fix procurement, no one even believed that there's a problem

Participant	Supporting excerpts
	The head of procurement arrives, goes back says sort out stuff and moves on with his life
	The permanent organisation stick to what they know even more rigorously.
	They always go to the same functions and it gets frowned on if one excuses oneself from an event so they literally move around in a pack and they never get to interact with anyone else.
	They never ever get involved or get their hands dirty in either the temporary or permanent organisation so to keep themselves busy they keep on speaking to each other and telling each other what they want to hear thus completely disconnecting them from both areas.
	This Rexco structure does not want to hear any issues coming forth about the permanent structure.
Participant H	I don't think they see the bigger vision of making sure that the organisation is a project orientated company.
	most of the direction is supposed to come from the executive level
	most other people do not actually upskill themselves to actually do projects
	there is no executive support for the project managers

Source: Author – derived from data

Table 49 - Weakness in middle managers

Participant	Supporting excerpts
Participant E	The Middle managers have a slight understanding of the temporary half and have a slight understanding of the permanent, so they are the ones that find themselves in conflict

Source: Author – derived from data

Table 50 - Weakness in project managers

Participant	Supporting excerpts
Participant A	That individual sitting on that chair is not fully equipped to deliver on expectations
	The way of our approach towards capacitating our in-house people is lacking, we are immature in matching the role to the requirement, and then selecting the right person for the job.
	Very simple, we take somebody, I have a number of them where we do an assessment then you can clearly see the project has not been defined to the degree and level it should be at that stage and then you get an argument with the project manager because of it.
Participant H	And they don't involve support services in the plan
	Project managers don't plan their work and don't work the plan

Source: Author – derived from data

Table 51 - Weakness in operational support

Participant	Supporting excerpts
Participant D	HR is also a huge, huge constraint because hiring staff is almost impossible and when that is done, it takes forever. It can take months.

Participant	Supporting excerpts
	Support services not properly managed by the permanent organisation, it's left up to the project organisation to try and make the permanent organisation provide the services
	the procurement system just doesn't work
	the project is totally without control until the procurement processes are completed
	The support services that are meant to be provided to the project environment in order to make them effective and efficient, do not exist
Participant H	procurement is supposed to prioritise the projects because most of the work that we do and the earnings that we get is basically the project work that we do
	Support services do not understand or respect the project management team's requirements. They don't make an effort to understanding.
	the project managers are not seen as the leading people who must actually sort of take the lead in terms of all the procurement that needs to happen
	they are not subordinating their priority to the project management people
	they will rather probably buy standard items like maybe instead of buying items which support projects

Source: Author – derived from data

Table 52 - Weakness in organisational ability

Participant	Supporting excerpts
Participant B	As an owner organisation we did not do mega projects for 20 years and now we start. We are not are ready for that, we have calibre of project managers or the business systems to support them.
	Project managers are actually toothless when it comes to instructing the support services. They have no power. These support services people do as they wish.
	We appoint very inexperienced people to very responsible roles.
Participant D	Delivery of the procurement processes are very poor, while they are competent, the procurement office or department is not efficient.
	The project manager is totally at mercy of support services.
	The reality is the permanent organisation doesn't see the need to change the HR processes to support project temporary environment's need.
Participant E	Executives are conflicted, one leg is in the permanent organisation but they are in charge of the temporary organisation. Their KPIs are fastened to their permanent organisation, however, they are being held responsible and accountable for their temporary organisations.
	HR is a business, as an organisation, they are not measured on staff retention.
	The temporary organisation gets hugely monitored and managed and they have got harsh KPIs, other than the permanent organisation.
	You can't take those production organisation policies and bring them to a temporary organisation. If I have to go and build a million-rand dam, I need temporary offices, temporary labour, temporary materials, everything must be temporary. I can't work with those policies.
Participant H	if the environment is supposed to be projectised and then it is not then the project management culture does not exist within the organisation.
	not putting systems in place to support the temporary organisation.
	support services as I look at them their main role is actually to support.
	the actual work that is being done at middle management.

Participant	Supporting excerpts
	we do have a lot of production orientated people in an environment that is supposed to be projectised.

Source: Author – derived from data

Table 53 - Governance constraints

Participant	Supporting excerpts
Participant A	Now unless they understand the dynamics there. How can you write a policy to prescribe to these guys, you see those challenges that we face. We need to get the permanent organisation and the support structures to the temporary organisation to understand Project management.
	Policies for example, the temporary organisation does not run or develop a policy, it's done by the permanent organisation.
Participant B	Bad contracting strategies: you've got to use this contractor, whether his is experienced or not, because this is what the new policy states.
Participant E	I need specific human resources for a limited period of time, but if hire them for more than 3 months the permanent organisation says I must hire them permanently. So when I don't get new projects I'm stuck with those people and cannot release them either.
	National contracts have a very short procurement process which suits the permanent organisation. If I do a project in a particular community they expect me to leave a portion of my expenditure in that area, but the permanent organisation procures on national contracts meaning that I cannot buy local and, the materials could come from very long distances, increasing time, cost and community problems.
	Now the HCM Head of the organisation is currently working on CAP9000, but the construction head has got a mandate to grow the business to be a construction company of the big five.
	There is conflict of interest between executive management, middle managers and junior management: because my KPIs have to comply with legislation, I can only do things that only support my KPI's, but it conflicts the temporary organisation and the same goes with the guys in the permanent organisation. What actually happens now is, in temporary organisation we do know that if we declare all the information, say now I am a project manager and I know if I declare that this job is going to be 8 months and it's going to be longer than a year they will tell me to appoint people permanently or to use that National existing contract to source my materials and stuff and I will then misinform the permanent organisation for my own survival because me, my KPIs are not linked with my Executive's KPIs. To add onto it, we have got the business side and we've got a support structure, completely disconnected.
Participant G	Everything has to follow a process regardless of the validity of the process.
	Nobody can challenge the process.
	Other process somewhere that put a spanner in the works and eventually people give up.
	We are over-obsessed with process.
Participant H	Everything is process driven and the process is not cognisant of the agility requirements of the project management.
	Governance becomes an obstruction.
	Governance red tape is getting thicker because people take advantage of opportunities.

Source: Author – derived from data

Table 54 - Heterogeneity between temporary and permanent

Participant	Supporting excerpts
Participant B	It needs to rely on the permanent organisation to supply the resources, the right resources though and in the same manner, you getting resource from the permanent organisation into the temporary organisation; you in turn need to use those resources to provide back to the permanent organisation.
Participant D	It is up to the project environment to make it happen and to use whatever methods within the permanent organisation to make the project happen.
	It is up to the project team to make the permanent organisation perform.
	The executive, what we call the sixth floor or the top management, do not effectively support project management in the business.
	The permanent organisation takes only limited responsibility towards the project manager.
	There is very little committed response from management when you go and say, but support services are delaying my project, I need your help…
Participant G	Its two separate entities and never that were the two shall meet until the temporary oke has finally decided what they needed to decide and whatever that is to be implemented.
	The change is forced upon the permanent organisation who dismissed it long time ago and that's why the change isn't working.
	The executive don't see it as interdependent.

Source: Author – derived from data

Table 55 - Organisational constraints

Participant	Supporting excerpts
Participant E	When my request for project resources goes go in to HR, they need to be accountable to deliver those resources within a set period. It's not in their KPIs. So they are just there and working to their own time.

Source: Author – derived from data

Table 56 - Process only

Participant	Supporting excerpts
Participant C	And I have taken guys who haven't had very good project management training or background and I got them to be good project managers by just instilling in them some principals.
Participant G	Everything has to follow a process regardless of the validity of the process.
	Nobody can challenge the process.
	Other process somewhere that put a spanner in the works and eventually people give up.
	We are over-obsessed with process.

Source: Author – derived from data

Table 57 - Inclusivity

Participant	Supporting excerpts
Participant A	Decision makers need to be sure when they make a decision on the permanent organisation side where does it affect the temporary organisation but what is the accumulative affect, because you make a decision here but because of the concept that is dependent everything is interlinked what is the accumulative effect?
	For this to be streamlined you have to be 100% sure that the people involved in the temporary organisation are from a decision maker prospective but also a guidance prospective and support service prospective who has to have basic understanding of the dynamics of the project.
Participant B	As much as you want to move to best practice and worlds best practice are we in the utility ready for that and how do you have to step it up, we'll have to take it very slowly.
	Developing the people on the project so they can deliver what's required for the project.
	It's about let's collaborate - you need something how can I assist you, how can I work with you through this journey, it's also competency development.
	The soft skills are totally lacking, so that's where we can pick up productivity, big drive we need to push to get productivity up. Juniors don't respect the project manager.
	You have to be very patient and build very good relationships, I found that it's this thing 'I'm coming from the permanent organisation and I know best'.
Participant G	Ask the people what needs to happen because inevitably if you give people a target they will come up with a solution.
	do it bottom up as opposed to top down give the people the end result that you want and ask them how to achieve them.
	filter it down to the people and ask the people how to implement.
	I would stop implementing new initiatives via small little pockets of so-called good resources.
	The people that's on the ground know what to do, they know where their lives are difficult or easy they know how they can or cannot improve and where they need more resources.
	You don't have to pay consultants to do things when the answer is inside the workforce that you already have.

Source: Author – derived from data

Table 58 - Operational strengthening

Participant	Supporting excerpts
Participant B	Cut away all this red tape, or bureaucracy, or nonsense.
	We are overstaffed. Optimise the people's roles and reduce unnecessary numbers.
	Yes and if you get good people, instead of having 3 people or 4 people doing and having 20% productivity you have 1 person and getting rid of 3 people.

Source: Author – derived from data

Table 59 - Project management as a core competency

Participant	Supporting excerpts
Participant A	Project Management needs to be a Core Competency of the entire organisation, Even if just the basics to management and non-project managers.

Participant	Supporting excerpts
Participant B	I think the driving with that should become a projectised organisation! Everyone should have a basic understanding of project management.
Participant C	But I found it to be successful and that is, is that you have to have at a senior level and I am not saying at what senior level, but at a senior accountability level, you have to have an appreciation of the outputs of time, cost and quality.
Participant D	For a project management environment to work effectively, the project portfolio and the project management projects need to be part of an organisational strategy.
	The executive need to be more involved with the project environment, such that they not only demand reports on progress but they also ensure that the support environments work to the benefit of the project environment, so that the whole organisation gets its benefits.
	The sponsor must be more active, accessible and supportive and be a proper sponsor. The project manager must be the single point of responsibility and the buyer, estimator, cost accountant, planner, quantity surveyor must report to the project manager.
Participant E	If our reasons for existence reside in the temporary structure then with everything we do in the permanent organisation and the temporary organisation must support/focus on this.
Participant F	Because Project Managers can take chaos and keep some sensibility in the chaos. I think strongly it's your own unique competencies and secondly for me very importantly how you manage work through other people that's really a Project Managers job.
	Project managers are very agile people, self-managers with unique skill sets, I think it's hard to actually teach people that.
	Project managers don't need to have multi layers of bosses, they self-manage and that's why they either succeed or fail, they either succeed spectacularly or fail spectacularly, it's about self-management skills.
	Project Managers have the ability to motivate people and lead people and that for me is becoming the biggest Project Management Competency.
	Take some of the executives to the site let them get their feet muddy and then also take a seasoned Project Manager and put him in the executive office and let him manage people and manage the business for a while, it will be good for them.

Source: Author – derived from data

Table 60 - Projectised functionality

Participant	Supporting excerpts
Participant B	Whoever sits in the project whether from the permanent organisation or not, is under the control of the project manager and should be under the control of the project manager and you don't see that.
Participant C	It would be nice to say you are interviewing you find people who have the right there but somehow we have to divorce because every person who is running projects in your organisation should be a good project manager and therefore you need processes.
Participant D	But if the performance is not up to standard then he should get support from the head of procurement, which in turn should be ratcheted up to the COO to ensure that the whole process is effective.
	The procurement officer must be integrated with the project manager, a member of the team.
	The procurement plans and durations must comply with what the project plans are.
Participant E	Align the strategic objectives of the permanent organisations must only support everything that is in our temporary organisation.
	Permanent organisation, objectives must be strategized in a way to support the temporary organisation, because the temporary organisation is the heart beat is the reasons we are here.

Participant	Supporting excerpts
	The temporary organisation is the heart beat of the business, we need to execute our project on time, quality, and within budget so that we can exist.
	We need to put the whole organisation on diet.
	We need to understand our existence, the reason for our existence.
Participant F	Firstly, the lifecycle model should be implemented across the business. All of the product group managers should enforce it.
	The head of procurement must instruct the buyer to perform.
Participant G	If you want to get the job done you need to work outside the process.

Source: Author – derived from data

Appendix 2 - List of acronyms

ANT – Actor Network Theory

APM – Association for Project Management

APMBOK – Association for Project Management Body of Knowledge

CEO – Chief Executive Officer

CFO – Chief Financial Officer

CM – Contract Manager

GAPPS – Global Alliance for Project Performance Standards

ICB – IPMA Competence Baseline

IPMA – International Project Management Association

PM – Project Manager

PMBOK – Project Management Body of Knowledge

PMMMM – Project Management Maturity Measurement Model

PMI – Project Management Institute

PMM – Project Management Maturity

PMO – Project Management Office

PO – Portfolio manager

SA – Site agent

SoT – Sociology of Translation

A – Product group A

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