The Alignment of Strategic Objectives within the context of Temporary Multi-Organisations

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ABSTRACT

Current research investigating the alignment of projects with organisational strategy has predominantly focused on formation and implementation of strategic objectives within the boundary of a single, permanent organisation. Within the construction industry, the temporary organisation, created by the client organisation to deliver the project, is formed from multiple organisations that are brought together, under contractual conditions, to engage in a single endeavour. This creates a situation whereby multiple strategic objectives, and hence, multiple perceptions of project success, are pursued at anyone time. The research, forming this thesis, investigates how the varied organisations that comprise a *Temporary Multi-Organisation* (TMO) seek to align multiple strategic objectives within the context of a single construction project, and realise project success. In achieving this aim, the study exposes a number of ambiguities and difficulties organisations face when seeking to realise strategic objectives through a TMO.

Four cases of recently complete construction projects within the public sector were selected for empirical study. Qualitative data collected from interviews with actors across organisations participating in each TMO, was supported by secondary data comprising of project documentation from each case. The study finds that the strategy of the TMO, which evolves to realise project success, is guided by the varied strategic objectives of organisations participating in the project, and is influenced by the environmental conditions, procurement strategies, client complexity and leadership style of the client project manager, which together, influence the strategic behaviour of the TMO.

This research contributes to theories of strategic fit and the theory of temporary organisations through a model of strategic alignment within the context of a TMO that explains the complex interactions, which occur when multiple organisations engage within a single construction project. The research also contributes to the understanding of project success through a model of identifying the varied and competing success criteria within a TMO. Finally, the research contributes to leadership theory, through analysis of leadership styles within the context of a TMO.

DEDICATION

For Lisa, Qasim and Safia…
Daddy's home. xxx

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Haniff A.P. & Fernie, S (2008) *Projects: Where strategies collide*. In Proceedings of the CIB 2008 Conference "Transformation through Construction" 15-18 November 2008, Dubai

Haniff, A.P & Ogunlana, S (2015) *Strategic alignment within a TMO: Perceptions of project success.* In Proceedings of ARCOM 31st Annual Conference. University of Lincoln 7th-9th September 2015

Haniff, A.P & Ogunlana, S (2015) '*Towards a Theory of temporary multi-organizations: Implications for project success'* in Proceedings Paper for the Engineering Project Organization Society. University of Edinburgh 24th-26th June 2015

LIST OF ABBREVIATIONS

APM Association for Project Management

CDM Construction Design and Management coordination

CGI Computer Generated Imagery

HMO House in Multiple Occupation

ID Interpretation Design

JMC Joint Main Contractor

JVC Joint Venture Contractor

MC Management Consultant

M&E Mechanical Engineering

OGC Office of Government and Commerce

PBF Project Based Firm

PM Project Management

PMC Project Management Consultant

PMI Project Management Institute

QS Quantity Surveyor

SBU Strategic Business Unit

TRPM Technical Services Project Management

TMO Temporary Multi-Organisation

CHAPTER 1
INTRODUCTION

1.1 Introduction to thesis

Current research into the alignment of projects with organisational strategy has predominantly focused on the formation and implementation of strategic objectives within the boundary of a single organisation. Within the construction industry, the temporary organisation, created by a client organisation to implement the construction project, is formed from multiple organisations that are brought together to engage in a single endeavour. This creates a situation whereby multiple strategic objectives, and hence, multiple perceptions of project success, are pursued at any one time. The research within this thesis sets out to investigate how varied organisations that comprise a Temporary Multi-Organisation (TMO) seek to align multiple strategic objectives within the context of a single construction project, and realise project success. In pursuit of this aim, the research explores the complex interactions, processes, influences and constraints that occur when multiple organisations engage within a construction project.

This introductory chapter provides the background to the field of study, summarising the theoretical perspectives considered within the research and the purpose of the study. This is followed by an explanation and statement of the research problem addressed within the thesis. The significance of the research, including contribution to theory, is discussed. A statement of the research aims and objectives is presented, together with a brief overview of the research methodology. The chapter concludes with an outline of the structure of the thesis, demonstrating how the aims and objectives of the research are achieved.

1.2 Background to study

The significant growth in project management across different industries has seen projects become an integral component of an organisation's strategic operations. This wider adoption of project organising has not only generated new business practices, but also challenges the common perceptions of project success. Projects are no longer perceived as endeavours to provide tangible products or results. Rather, projects are now viewed as vehicles for business transformation, continuous improvement, organisational change, value creation and implementation of strategic objectives (Winter *et al.*, 2006a; Winter *et al.*, 2006b; Maylor, 2001). Traditionally, a project was

deemed successful if it achieved the project scope within the predetermined schedule, budget and quality constraints (Oisen, 1971). Within the strategic management domain, a project is successful when it enables the realisation of an organisations, long-term, strategic aspirations (Shenhar *et al.*, 2001).

Central to the discussion of projects to implement organisational strategy, is the concept of strategic fit. This considers the degree of alignment that exists between the competitive environment and organisational conditions (Ginsberg and Venkatraman, 1985). Within the project environment this involves either, ensuring that projects, selected for implementation, fit with the strategic objectives of the organisation (Cooper *et al.*, 1999; Aalto, 2000; Meskendahl, 2010), or that the project management processes are appropriately aligned to realise the organisations business strategy (Milosevic and Srivannaboon, 2006; Joshi *et al.*, 2003).

Following Hofer and Schendel's (1978) suggestion that strategy be constrained by the upper level within a strategic hierarchy, the proposition is made that alignment of a project with an organisation's strategic objectives is achieved by setting strategy at the corporate level and cascading down through strategic and operational levels, to be implemented as projects (Archibald, 1988; Youker and Brown, 1998). Kerzner (2001) presents a hierarchy illustrating how corporate strategic plans flow horizontally across strategic business units to support plans and budgets. Whereas, Morris and Jamieson (2004) show how organisations position their programmes and projects to achieve strategic objectives.

However, it is recognised that strategy occurs at differing levels in an organisation, and that each level will have its own, distinctive and often competing, strategic intentions (Turner, 1999; Haniff and Fernie, 2008; Morris and Jamieson, 2005). Subsequently, stakeholders at each level of a strategic hierarchy are likely to focus on the unique strategic objectives developed in response to the specific environmental conditions in which it competes. As the filtering of strategic objectives from the corporate to the project level involves a number of complex interactions, processes, customers and varied strategic constraints, it is proposed that organisational strategies formulated at the corporate level will be subject to incremental, internal and external influences before, and during, implementation as a project.

1.2.1 Temporary organisations

The strategic stream in project management research has also renewed interest into project organisational structures and how they are coordinated to achieve project success. Whereas during the 1970's, research focused on organisational behaviour and matrix organisations (Knight, 1976), more recent research has concentrated on the examination of projects as temporary organisational forms (Lundin and Soderholm, 1995; Jacobsson *et al.*, 2015; Bakker, 2010; Turner and Muller, 2003). Termed to reflect their transitory nature, the dominant discourse makes the assumption that temporary organisations are formed within the organisational boundary of a permanent organisation to manage complex organisational tasks (Turner and Muller, 2003; Packendorff, 1995; Goodman and Goodman, 1976).

A consistent theme within the literature has been on defining the characteristics of a temporary organisation and justifying their existence (Miles, 1964; Bennis and Slater, 1968; Goodman and Goodman, 1976; Miles, 1977; Soderlund, 2004a; Jacobsson *et al.*, 2015). Lundin and Soderholm (1995) present a theory of temporary organisations demarcating between permanent and temporary organisational behaviour. Developed as an opposing model to Cyert and March's (1963) behavioural theory of the firm, Lundin and Soderholm (1995) identify four concepts of limited time of the project, the task that must be accomplished, the team that is formed around that task, and the transition as a result of the task, which determines the behaviour of temporary organisational actors.

1.2.2 Temporary multi-organisations

Following Lundin and Soderholm's (1995) much cited framework, there has been a growth of studies exploring intra-organisational temporary systems (Bakker, 2010; Turner and Muller, 2003; Jacobsson *et al.*, 2015). Conversely, discourse on temporary systems involving inter-organisational relationships has not received the same attention. Instead, the assumption is made that many of the propositions underpinning Lundin and Soderholm's (1995) basic concepts apply to all temporary organizational types. However, within the construction industry, the temporary organisation is not formed within the boundaries of a single parent organisation. Rather, it operates within an environment of overlapping organisational boundaries where multiple organisations simultaneously seek to ensure their own organisational strategies are realised through a single project. Within a construction project, the composition of the temporary system typically consists of multiple firms, each making representation on a single endeavour.

Defined by Cherns and Bryant (1984: 181) as a *"temporary multi-organisation",* typical membership includes consultants, contractors, sub-contractors and suppliers, with a client system that is itself organisationally complex. Not only do these actors participate in the project, but as key stakeholder, also have significant influence over project related decisions (Cleland, 1998).

It is the fundamental differences between inter and intra-organisational types that have implications for the pursuit of strategic alignment and the measurement of project success. Firstly, actors within TMOs are brought together under contractual conditions to provide specific elements of management, services or resources to deliver a facility on behalf of a client body. Hence, much of the research into TMO relationships focuses on procurement strategies (Lizarralde *et al.*, 2011). Secondly, the inter-organizational nature of TMOs often results in actors having different levels of expertise, overlapping areas of responsibilities and disparate strategic objectives (Jones and Lichtenstein, 2008). Thirdly, engagement in a construction project is over different points in time and changes throughout the project lifecycle as specific organisational services or resources are required (Cherns and Bryant, 1984). Consequently, actors within a TMO are never fully integrated, either within or between organisations involved in a construction project (de Blois and Lizarralde, 2010).

1.2.3 Strategic alignment of projects

The most important distinction with regards to the strategic alignment of projects, concerns the degree of autonomy a project has in relation to the client organisation (Lampel and Jha, 2004). The dominant discourse within the literature makes the assumption that temporary organizations are subordinate to a single parent organisation and will serve as an *'obedient servant'* to the parent organisation, as its most important stakeholder (Artto *et al.*, 2008). The notion is that strategic objectives formulated at the upper levels of the strategic hierarchy are fixed for the subordinate, temporary organisation to implement as directed. Alignment within this context is measured on how well the project management process supports the parent organisation's strategy (Srivannaboon, 2006). In contrast, within any given construction project, there exists a number of organisations that are guided by their own strategic objectives, organisational structure, individual set of stakeholders and own rationale for participating in the TMO, from which varied perceptions of project success will be measured. Consequently, it is unlikely that the activities of the TMO will be constrained to the strategic directives of a

single parent organisation. Instead, it is proposed that the TMO will be in a state of compromise and negotiation as it seeks to align the project with multiple organisational strategies.

In considering the argument above, this thesis sets out to address an important gap in construction management research, by investigating how individual organisations, that comprise a TMO, seek to align multiple strategic objectives through a single construction project. In considering the complex interactions that occur between organisations within a TMO and the complexity of strategy itself (Hambrick, 1983; Mintzberg *et al.*, 1998), it is proposed that alignment of an organisation's corporate strategy with the implementation of a construction project will not be as prescriptive as current literature assumes. Instead, project success will be subjective and will follow a complexity of strategic influences.

1.3 Research problem

This thesis identifies three related problems that are addressed through the research, leading to a problem statement in Section 1.3.4. The first considers the limitations of current studies into the strategic alignment of projects. The second considers the nature of the construction industry, in respect to the alignment of strategic objectives. The third problem considers the difficulty in reaching agreement on project success, when multiple organisations engage in a single construction project.

1.3.1 Current studies of strategic alignment of projects

As previously discussed, the dominant discourse explores the strategic alignment of projects within the intra-organisational context (Milosevic and Srivannaboon, 2006; Skulmoski and Hartman, 2000; Ritson *et al.*, 2012). Of the models that have been developed explaining how strategic objectives are implemented through a project, focus has been on the inherent constraints within a single organisational hierarchy (Morris and Jamieson, 2004; Turner, 1999). More often, implementation of strategy is seen as a deliberate process where strategy is articulated at a higher level of an organisation and realised at the project level, through operational detail and tactical adjustment (Archibald, 1988; Youker and Brown, 1998). However, within a project environment the strategic plan is rarely acted upon in a prescriptive manner as models suggest and most strategic actions manifest themselves in a more, haphazard, process (Hauc and Kovac, 2000).

The underlying assumption made within a strategic hierarchy is that strategy involves clear communication of strategic intentions and objectives, against which line managers devise their own operating targets and plans (Snow and Hambrick, 1980). Consequently, the strategy implementation process is entrusted to the organisations internal systems and procedures (Mintzberg and Waters, 1985; Hrebiniak and Joyce, 1985), and in the form of projects becomes the responsibility of the project manager, who typically has little involvement in the strategy formation process (Pellegrinelli and Bowman, 1994). It is this gap between formulation and implementation that is considered to be the main deficiency in most strategic planning processes (Grundy, 1998). Also, because such a separation hinders the rapid implementation of business strategies and ignores emergent influences (Crawford, 2005).

Mintzberg (1994) proposes that strategies emerge over time, rather than being a deliberate course of progression. Although, most projects follow some form of strategic planning process, strategy may not be realized in a ridged or formal manner as the higher levels of the hierarchy assumes (Mintzberg and Waters, 1985; Morris and Jamieson, 2004). Typically, the realisation of strategy is subject to external forces (Porter, 1985) and internal influences (Rumelt, 1974). As such, strategic objectives developed at one point in time, at a specific hierarchical level, will be subject to incremental deviations in response to external and internal pressures at each stage of the strategic hierarchy. Despite this, current models demonstrating how organisational strategy is translated through a project, do not take into consideration external or emergent strategic influences.

1.3.2 Strategic alignment of projects within the construction industry

In comparison to temporary organisations within an intra-organisational context, there has been relatively little research considering the strategic alignment of projects within the construction industry. Previous studies have investigated the competitive strategies of construction organisations through business level and project management processes (Tan *et al.*, 2012; Meredith and Chinowsky, 2000; Budayan *et al.*, 2015), but studies investing the pursuit of the strategic aspirations of multiple organisations participating in a single construction project remain sparse. Unlike projects operating within single organisational boundary, the TMO operates in an environment of overlapping organisational boundaries, where multiple strategic hierarchies converge. Within the construction industry, a single construction project represents a strategic investment for

a number of organisations. This not only includes the investment decision of the client to develop a facility as part of a wider organisational strategy, but also the strategic decisions of the consultants and contractors to commit recourses to a specific project in order to achieve specific competitive advantages.

Current research within TMOs tend to focus on formal procurement strategies and contractual relationships, as mechanisms to maintain alignment with the client's strategic objectives (Lizarralde *et al.*, 2011). But, even in themselves, procurement systems provide strong evidence of the predominance of the single project perspective (Blismas, 2001). Whereas, procurement strategies provide formal conditions of responsibility of each organisation participating in the project, they do not determine the strategic behaviours of individual TMO actors. As a result of the uncertainty, high risk and problems associated within a project environment (Lau and Rowlinson, 2011), coupled with the partial engagement of TMO actors over time (Cherns and Bryant, 1984), behaviours within the TMO are likely to evolve and change over the duration of the project.

This creates difficulties for the notion of strategic alignment within the context of a TMO. At the operational level of any given construction project there exist a significant number of stakeholders in the form of the project team, who differentiate in terms of skills, professional body and loyalty to ones own firm (Walker, 2007). Moreover, the consequences of fragmentation between parties has been discussed by Latham (1994) and confirmed in Egan's (1998) report, which views the construction industry as:

> *"…typically dealing with the project process as a series of sequential and largely separate operations undertaken by individual designers, constructors, and suppliers who have no stake in the long-term success of the product and no commitment to it"* (Egan, 1998: 13)

TMO actors develop personal conflict of allegiances, not only to the client, but also to their employer, professional body and bounded rationality (Cyert and March, 1963). As each team member is commonly employed by different organisations there does not exist one organisational strategy, rather there exists a number of strategies, all being pursued at any one time.

1.3.3 Project success

A further difficulty deriving from procurement processes is that success of the project is constrained to the efficiency of the TMO in delivering the project within time, cost and quality objectives as stated in the conditions of contract. Whereas, efficiency in managing projects may contribute to project success, it does not necessarily result in the project being successful (De Wit, 1988). This is due to the subjective nature of success (Pinto and Slevin, 1988), and the notion that varied stakeholders within a construction project have different opinions on what constitutes an effective project and make assessment on varied, often subjective, criteria (Freeman and Beale, 1992; Belassi and Tukel, 1996).

In considering the multiple stakeholders that have an interest in a construction project, there is a high likelihood that there will be a difference in the perception of project success within and between organisations participating in the project. Whereas, members of the temporary organisation are likely to measure success on the efficient implementation of project processes, members of the parent organisation are likely to measure success on the contribution the project makes to the individual levels within the client hierarchy, and to the long-term strategic objectives of the business (Shenhar *et al.*, 2001; Baccarini, 1996).

1.3.4 Problem statement

Therefore, the research problem addressed in this thesis is stated as follows:

> *The construction industry presents a situation where multiple organisations seek to align multiple strategic objectives through a single a project. Consequently, the realisation of organisational strategy, and project success, will be influenced by factors internal and external to the TMO.*

The literature review, methodology, data collection and data analysis within this thesis, are designed to address the research problem, as stated.

1.4 Research significance

Through investigation into the strategic alignment of a TMO, this thesis contributes to theory and research in the following areas:

1.4.1 Contribution to temporary organisational theory

Since publication of Lundin and Soderholm's (1995) seminal paper introducing a theory of temporary organisations, there has been a number of studies exploring the temporary

organisational form within the intra-organisational context (Bakker, 2010; Janowicz-Panjaitan *et al.*, 2009; Bechky, 2006). In contrast, research into the inter-organisational context of temporary organisations has been relatively sparse. This is despite Cherns and Bryant's (1984) publication defining the basic characteristics of a TMO and providing guidance for research into the temporary organisational form, being introduced into the literature eleven years before Lundin and Soderholm's (1995) theory of temporary organisations. Through empirical study, this research examines the unique strategic behaviours of TMO actors within the themes of *time*, *task*, *team* and *transition*, thereby extending knowledge of temporary organisations to greater consideration of inter-organisational implications. At the same time, TMO characteristics, as defined in Cherns and Bryant's (1984) pilot study, are empirically examined.

1.4.2 Contribution to theories of strategic fit

Current models of alignment explain how strategy is set at the corporate level of a parent organisation and implemented by a temporary organisation created within the organisational boundaries of a single organisation. In contrast, within any given construction project there exist a number organisations that are influenced by their own strategic objectives, organisational structure, individual set of stakeholders and strategic rationale for joining the TMO. To date, a definitive model explaining how multiple organisations align strategic objectives through a single construction project has not been presented within the literature. It is argued that within the context of a construction project, strategic alignment will be significantly more complex than within an intra-organisational context. This is not only as a result of the increased number of stakeholders, but also the intra-inter originations relations (Lizarralde *et al.*, 2011), the complexity of the client system (Cherns and Bryant, 1984), environment conditions (Porter, 1980), the varied perceptions of project success (De Wit, 1988), and the strategic behaviours of actors within a temporary organisation (Lundin and Soderholm, 1995).

1.4.3 Contribution to understanding of project success

The third contribution to theory concerns the perceptions of project success. Despite the abundance of studies investigating the success of projects, there are actually limited studies considering how success of a construction project supports the strategic objectives of a client organisation. Most studies considering project success tend to focus on success factors that need to be in place for success to be realized, with less

research into the criteria on which success should be measured (Ika, 2009). Based on the proposition that strategy occurs at different levels within an organisation (Hofer and Schendel, 1978), and that varied stakeholders will have different perspectives of project success (De Wit, 1988), this thesis makes contribution to theory, by identifying the varied perceptions of project success within the context of a construction project, and establishing how these link to the realisation of strategic objectives.

1.5 Research aims and objectives

In considering the research problems established in Section 1.3, and the contribution to theory affirmed in Section 1.4, the aim of this thesis is to investigate how varied organisations within a temporary multi-organisation seek to align multiple strategic objectives through a single construction project, and realise project success. This will be explained through a theoretical model of strategic alignment within the context of a TMO, as an alternative to models explaining strategic alignment within the context of a single organisation. To address this aim, the following research objectives of the study are pursued:

- **Objectives 1:** Explore how multiple organisations within a TMO align varied strategic objectives through a single construction project.

- **Objective 2:** Examine the effectiveness of mechanisms implemented to maintain alignment of strategic objectives.

- **Objective 3:** Explore the strategy of the TMO in the pursuit of the varied organisational strategies inherent within a TMO

- **Objective 4:** Explore the linkages between project success and the intended strategic objectives of TMO actors.

1.6 Methodology

The research within this thesis can be characterised as exploratory within the context of construction management and strategy. The aims and objectives of the research are presented in Section 1.5 and an outline and structure of the thesis is presented in Section 1.7. The research questions informing the study were developed from gaps identified within the current literature, presented in Chapter 3. The methodology and research

approach designed to address the research questions and research objectives are detailed in Chapter 4.

A multiple case study design, using replication as the underlying logic (Yin, 2014; Eisenhardt, 1989b) was developed to provide the empirical data to achieve the aims and objectives of the thesis. Cases studies were selected through purposeful sampling using pre-defined criteria. Four case studies, comprising of recently completed construction projects within the public sector and used to provide data for the research. Data within each case study was formed from a combination of collection methods, which included semi-structured interviews, archives and documentation. Triangulation was achieved through multiple sources of evidence. Interviews were conducted at the micro level between actors within each TMO and at the macro level between organisations participating within the TMO, including key stakeholders within the client organisations. To ensure reliability, all interviews were professionally transcribed and managed using NVivo computer assisted qualitative data analysis software, for coding and analysis.

1.7 Structure of thesis

The structure of the thesis, identifying the purpose of each chapter is illustrated in Figure 1.1. An outline of each chapter is as follows:

- **Chapter 1** provides the background to the field of study, summarising the theoretical perspectives considered within the research and the purpose of study. Research aims and objectives are justified through a discussion of the research problems addressed within the thesis and the contribution the research makes to theory.

- **Chapter 2** provides the first of two chapters forming the critical analysis of literature and themes explored within the research. This, first chapter positions projects within the context of organisational strategy and provides a review of the extant literature contributing to the strategic alignment of projects. The review includes an overview of the main theoretical models of strategy and examination of the different perspectives to strategic fit from within the strategic management literature, including the concept of the hierarchy of strategic objectives. To position the study within the contemporary literature, a short history of project management research is

presented, introducing the strategic stream of project management research. This is followed by a critique of current models explaining the strategic alignment of projects and an introduction to the concept of project strategy.

- **Chapter 3** provides a review of the extant literature on temporary organisational forms that are created to implement organisational strategy through projects. In particular, the review focuses on the behaviour of temporary multi-organisations within the construction industry. The chapter presents a review of the early discourse on temporary systems from within the organisational behaviour literature, before providing a critique of Lundin and Soderholm's (1995) basic concepts that contribute to the theory of temporary organisations. Variations of temporary organisational forms are explored before defining a TMO. Following Cherns and Bryant's (1984) study, the issues of client complexity within the context of the construction industry are discussed. The examination of TMOs concludes by investigating the role of procurement strategies and governance mechanisms in the strategic alignment of projects. Finally, a discussion of research gaps, research questions and a conceptual model, to guide the methodology of the study, is presented.

- **Chapter 4** describes the rationale for the research method pursued within this study. This includes a discussion of the philosophical assumptions that influence the methodological choice. Justification for the case study research approach is provided, along with a detailed description of the research design guiding the data collection and analysis. The methods of data collection utilised within the research are discussed with an explanation of the instruments used to analyse the collected data, and from which conclusions are drawn from the findings. Finally, the principle of ethical research relevant to the thesis are considered and discussed.

- **Chapter 5** is the first of two chapters reporting the empirical findings and analysis from the collection of data. Through a process of within-case analysis, this chapter offers an in-depth investigation into each of the four cases. For the purpose of replication logic, each case is segmented in specific themes, which are used to address the research questions of the study. These include the structure of the TMO, an examination of the strategic objectives, mechanisms implemented to maintain alignment of strategic objectives, internal and external influencing factors, an

examination of the project strategy, and an enquiry into the varied stakeholder perception of project success.

- **Chapter 6** discusses the findings through the process of cross-case analysis, based on the *a priori* themes identified within literature review and *a posteriori* themes emerging from the findings. Themes are explored and examined in relation to the research objectives of the study. Two important models, developed from the analysis, are presented to address the aims of the thesis. The first is a model of project success identifying the varied perceptions of project success within a TMO, and the implications for strategy alignment. The second is a model of strategic alignment within the context of a TMO, which explains the complex interactions, internal and external influences, and the strategic behaviours of TMO actors, that determine the strategy of the TMO in pursuit of project success and realisation of strategic objectives.

- **Chapter 7** presents the final conclusions of the research. This chapter begins with a review of the aims the study and an explanation of how each of the research objectives were achieved. A discussion of the theoretical and practical contributions is also presented. In reflecting upon the limitations of the study, recommendations for future research are proposed.

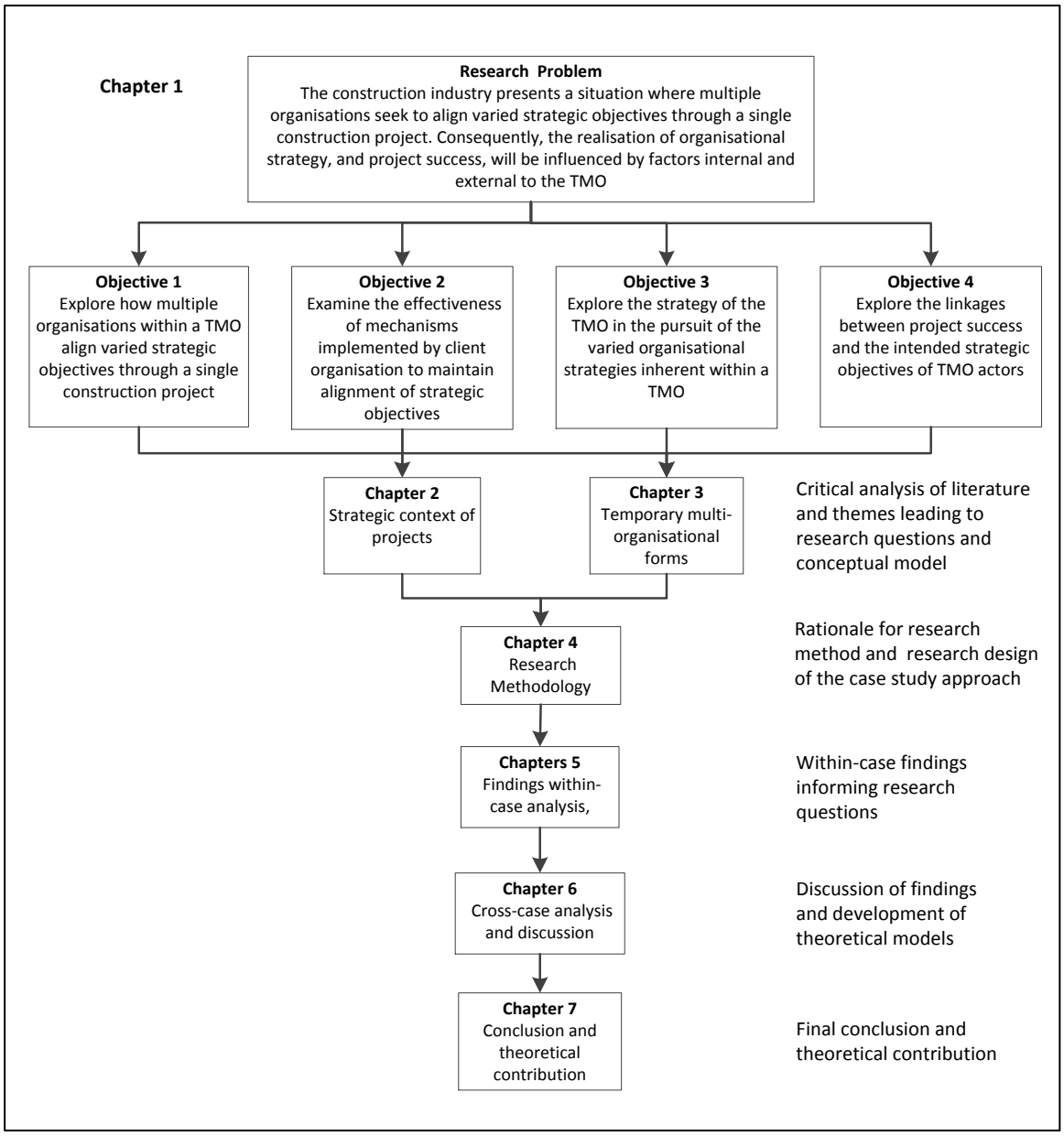

Figure 1.1: Structure of thesis

1.8 Conclusion to chapter

This introductory chapter provides the general context of the thesis, summarising the theoretical perspectives considered within the research and justification for the study. The research aims and objectives are stated, with an outline of the structure providing guidance as to how the aims and objectives of this thesis will be achieved. The following chapters develop the theoretical context through a review of the literature and the development of conceptual diagram to guide the methodology of the study.

CHAPTER 2
THE STRATEGIC CONTEXT OF PROJECTS

2.1 Introduction to chapter

This chapter is the first of two forming the critical analysis of literature and themes explored within the study. The chapter positions projects within the context of organisational strategy and provides a review of the extant literature contributing to the strategic alignment of projects. The review commences with an overview the main theoretical models of strategy. This is followed by examination of the different perspectives to strategic fit from within the strategic management literature. The concept of the hierarchy of strategic objectives is then introduced. The second part of the chapter provides a summary of the evolution of project management and the move towards implementing strategy through projects, before presenting a critique of current models of strategic alignment of projects. Finally, the chapter concludes by introducing the concept of project strategy, exposing the challenges of aligning projects with organisational strategy.

2.2 The nature of strategy

A significant number of scholars find a lack of consensus for the definition of 'strategy' within the literature (Hofer and Schendel, 1978; Chaffee, 1985; Bourgeois, 1980; Shirley, 1982). Hambrick (1983) proposes that this lack of consistency is due to two factors; firstly, that strategy is multidimensional in character, and secondly, strategy is situational and varies by industry. Chaffee (1985) also suggests that the lack of consensus regarding a definition is due to the pluralistic nature of strategy and the fact that various models exist to explain the concept. To explore the varied perspectives, the review draws a comparison between Chaffee's (1985) three models of strategy and Mintzberg's (1987) classification.

2.2.1 Chaffee's three models of strategy

Chaffee (1985) suggests that the term 'strategy' refers to three mental models of *'linear'*, *'adaptive'* and *'interpretive'*. The focus of the '*linear'* model is on long term strategic planning. This focus on planning is also inherent in Chandler's (1962) definition as *"the determination of the basic long-term goals of enterprise and the adoption of courses of action and the allocation of resources necessary to carry out these goals"* (Chandler, 1962: 13). Within this perspective, strategy consists of

decisions, actions and plans delivered in a sequential and hierarchical process. Chaffee (1985) advises that it is this model that forms the foundations of strategic planning where conceptually, managers at every level of the hierarchy must agree on a detailed, integrated plan of action for the coming year (Lorange and Vancil, 1976). This is despite Mintzberg's (1994) observation that the commitment required at each level of the hierarchy, together with the lack of flexibility required by strategic thinkers, resulted in a shift away from strategic planning by the mid 1970's.

The '*adaptive'* model is characterised by Hofer (1973) as being *"concerned with the development of a viable match between the opportunities and risk present in the external environment and the organisations capabilities and resources for exploiting these opportunities"* (Hofer, 1973: 3). Within this perspective the organisation is expected to define its relationship to its environment in the pursuit of objectives (Bourgeois, 1980). This requires constant monitoring of the external environment and making simultaneous internal changes. Therefore, the key premise of the '*adaptive'* model is that strategy should favourably 'match' the business with its environment (Andrews, 1971; Porter, 1980; Hatten and Schendel, 1977). However, whereas the '*adaptive'* model assumes that the organisation must change with the environment, Miles and Snow (1978) argue that strategy is relatively fixed and therefore constrains the organisation in its response to environmental changes. Despite this, the '*adaptive'* model goes someway towards explaining the complexity of the changing environment and is consistent in current models of strategy formation (Lynch, 2006; Pearce and Robinson, 2003; Grant, 2005).

The third model in Chaffee's (1985) definition is the '*interpretative'* strategy. This view is based on the social contract that portrays the organisation as a collection of cooperative agreements entered into by individuals with free will. Within the '*interpretative'* model, strategy becomes a mental process where the organisation's existence relies on its ability to attract enough individuals to cooperate in mutually beneficial exchange. In contrast to the adaptive model where the environment is defined, the '*interpretative'* model manages the environment through symbolic actions and communication. Therefore, within this context, strategy becomes an organisational wide activity and is dependant on the motivation of stakeholders to believe and act in ways that are expected, in order to produce favourable results for the organisation. This

is in contrast to the '*linear'* model where strategy is predetermined by senior management.

2.2.2 Mintzberg's five P's for strategy

Mintzberg (1987) presents five dimensions of strategy, which he refers to as the "Five P's". These are defined as *'plan'*, *'ploy'*, *'pattern'*, *'position'* and *'perspective'*. Strategy as a '*plan'*, aligns with Chaffee's (1985) '*linear'* model, in that strategy setting involves a deliberate conscious set of guidelines that determine decisions for the future (Mintzberg, 1978). As a '*plan'*, Mintzberg (1987) proposes that strategy can also be a *'ploy'* defined as a specific manoeuvre intended to outwit an opponent or competitor.

The third dimension in Mintzberg's (1987: 12) framework is strategy as a *"pattern in a stream of decisions"*, which aligns with Chaffee's (1985) '*interpretive'* model. This dimension considers the resulting behaviour of strategy over time. For Mintzberg and Waters (1985), most manifestations of strategy are implicit, fragmented and fluid. A distinction is drawn between deliberate strategies, as those realised as intended, and emergent strategies, which are realised despite, or in the absence of, intention. Mintzberg and Waters (1985) argue that for a strategy to be realised as intended, at least three conditions need to be satisfied. First, there must exist precise intentions of the organisation articulated in a specific level of detail. Second, there must be effective control mechanisms in place to ensure that the intentions are indeed organisational. Third, strategic intentions must be realised exactly as intended, and that no external force could have interfered with them. Therefore, in accepting that organisational strategies emerge unintentionally, it is proposed that the only way of defining strategy is to analyse the strategic actions and results after the event (Mintzberg, 1978).

Mintzberg's (1987) '*position'* dimension supports Chaffee's (1985) '*adaptive'* model, in that strategy involves locating the organisation within the external environment and seeking a match between the internal and external context (Hofer and Schendel, 1978). Mintzberg (1987) affirms that a *'position'* can be predetermined through a '*plan'* or '*ploy'*, but realised through a pattern of behaviour and deployment of resources. Whereas, the '*position'* dimension considers the external environment, the '*perspective'* dimension considers the internal environment of the organisation. This includes the internal structures, culture and processes.

Successful implementation of strategy within Chafee's (1985) '*adaptive'* model and Mitzberg's (1987) '*position'* and '*perspective'* dimensions are dependant on alignment either between the internal and external environment or within the organisation. This is discussed further in the following section.

2.3 Strategic fit and alignment

The concept of strategic fit has become a central theme within the strategic management literature. Examination of the literature reveals different terms used to define the principle. These include *'congruence'*, *'match'*, *'consistency'* and *'alignment'*. As a core construct of contingency theory, the basic proposition of strategic fit is that the degree of alignment between organisational and environment conditions has a significant effect on performance (Ginsberg and Venkatraman, 1985). Fry and Smith (1987) advise that, if conditions or organisational components 'fit well' then the organisations functions effectively. In contrast, if components 'fit poorly' the converse will apply.

Despite the general agreement within the literature regarding the notion of fit, there remains criticism regarding clarification of the concept (Venkatraman and Camillus, 1984; Van de Ven, 1979). This can partially be attributed to the fact that differing views exist of how fit should be achieved and which organisational components or conditions need to be aligned. A review of the literature finds at least three different perspectives to explain the domain of fit. The first perspective focuses on strategy formulation and sees fit as alignment between strategy and the external environment. Fundamental to strategic management, the concept of strategic fit involves aligning organisational resources with environmental opportunities and threats (Andrews, 1971; Chandler, 1962). Drawing on industrial organisation economics (Bain, 1950), Porter (1980) identifies five key industry forces that need to be recognised by the organisation when devising strategy. Whereas, Hatten and Schendel (1977) determined the need to formulate differential strategies through strategic groups within specific industries. Also, in considering the product life-cycle growth rate, Hambrick *et al.* (1982) studied the relationship between strategy and relative market share.

The second perspective focuses on strategy implementation, and sees fit as alignment between strategy and internal elements. Strategic alignment is achieved by tailoring internal administrative and organisational mechanisms in line with organisational

strategy, with almost no direct reference to external influences (Venkatraman and Camillus, 1984). The dominant theme in this perspective is the strategy-structure relationship. This follows Chandler's (1962) proposition that a change in strategy requires change in all organisational activities so that the structure of the organisation fits with the new strategic objectives. The salient factor within the strategy-structure perspective is that the strategy is articulated at the outset and alignment is achieved by adapting mechanisms and structure to the articulated strategy (Ansoff, 1965). In considering diversification strategy, Rumelt (1974) related the fit between strategy and structure on performance. Lenz (1980) also found combinations of strategy and structure on high performance firms differed from combinations associated with low performance firms.

However, Venkatraman and Camillus (1984) caution that strategy implementation is more than a fit between strategy and structure. Norburn and Miller (1981) propose a fit between strategy and reward systems. Schwartz and Davis (1981) argue for the need to ensure alignment between strategy, organisation and culture. Whereas, Waterman Jr. (1982) argued for alignment among the seven internal elements of strategy, structure, systems, style staff, skills and subordinate goals, as presented within the McKinsey 7-S framework (Waterman Jr. *et al.*, 1980).

The third perspective takes an integrated approach, where strategic management involves both strategy formulation and implementation, covering both organisational and environmental decisions. Central to this theme is the proposition that there must be alignment between the context, strategy and structure (Galbraith *et al.*, 1986; Venkatraman and Camillus, 1984). Models such as Miles and Snow's (1978) attempt to specify a relationship between structure, strategy and process by proposing that firms should develop relatively stable patterns of behaviour in order to accomplish alignment with environmental conditions. Nadler and Tushman (1980) take a total systems approach and suggests that fit occurs when each organisational components needs, demands goals and objectives are aligned with other components needs, demands goals and objectives. In considering the ability to realise the value of technologies, Henderson and Venkatraman (1993) present a model of alignment between the market, structure and IT processes. From a management perspective, Chorn (1991) proposes that strategic fit rests on the alignment between the four *'logics'* of the competitive situation, strategy, culture and leadership. More recently, Carmeli *et al.* (2010) explores how leadership

enables a firm to change and adapt to its external environment and, by implication enhance performance. They argue that while internal fit is of importance, it is of little value by itself unless the organisational system as a whole is aligned with its external competitive environment.

Despite, wide ranging discussion regarding the notion of fit, a number of authors recognise inherent problems with the concept. Zajac *et al.* (2000) observe that the static orientation of fit implies alignment only at a single point in time and does not appreciate the extent of strategic change. Venkatraman (1989) also concludes that existing studies focus on cross-sectional approaches and calls for the development of mechanisms to test fit within a longitudinal perspective. Moreover, the static orientation of fit does not adequately take into the consideration the emergent strategies discussed in Mintzberg's (1987) framework. As affirmed by Zajac *et al.* (2000) organisations face multiple environmental and organisational contingencies and, therefore, the concept of fit and alignment need to be conceptualised in more dynamic terms to reflect uncertainty and the changing environment.

2.4 The strategic hierarchy

A further complexity in the concept of alignment is the recognition that strategy occurs at differing levels within an organisation. In proposing that each level be constrained by the upper level, Hofer and Schendel (1978) categorises the levels of a strategic hierarchy as *'corporate'*, *'business'* and *'functional'*. The proposition is made that strategic priorities between levels of the organisation need to be aligned for organisational performance to be enhanced (Joshi *et al.*, 2003).

Corporate-level strategy defines the scope of the organisation in terms of the industries and markets in which it competes and the range of business it pursues (Andrews, 1971; Ansoff, 1965). Hofer and Schendel (1978) provides the following definition:

> *"Corporate-level strategy is concerned primarily with answering the question of what set of businesses should we be in. Consequently, scope and recourse deployments among business are the primary components of corporate strategy"* (Hofer and Schendel, 1978: 27).

Referred to as the *"primary strategy"* of the organisation (Bourgeois, 1980: 27), an organisations corporate strategy can be operationalized in terms of the distribution of a firm's assets, employment, capital-budget or other indexes of a firm's resources among the range of industries and markets it operates in (Beard and Dess, 1981). Thus, at this

level the primary role of an executive board is to ensure the growth, risk reduction and profitability of the organisation through the synergy of the diverse business units within the firm (Grant, 2010; Rumelt, 1982).

Business level strategy focuses on the competitive actions of a firm in a particular industry or product/market segment (Hofer and Schendel, 1978). Bourgeois (1980: 27) refers to this as the *"secondary strategy"* of the organisation. Beard and Dess (1981) defines business level strategy in terms of variation in a firm's characteristics, relevant to competitive success or failure within a given industry. As such, a firm has a unique business-level strategy for each industry within which it competes, and *"the relevant characteristics of the firm's business level strategy would be measured relative to the range and norms on each characteristic in each of the industries"* (Beard and Dess, 1981: 667).

From a resource-based perspective, the type of strategy the firm chooses to pursue will be greatly influenced by its core competencies (Prahalad and Hamel, 1990). As each strategic business unit (SBU) is fundamentally constrained by the resources and capabilities at the upper level of the hierarchy, competitive advantage is sustained by redeploying the unique valuable resources of the SBU to enable the creation and enhancement of dynamic capabilities in response to the changing environment (Teece *et al.*, 1997). For Hofer and Schendel (1978) achieving synergy at this level becomes more significant, as it needs to focus on the integration of different functional area activities within each, single SBU.

The focus of the functional-level strategy is on the maximisation of resource productivity within each function of a single SBU (Ginsberg and Venkatraman, 1985). At this level, synergy and the development of distinctive competencies becomes the key strategic component, where synergy involves the coordination and integration of activities within a single function (Hofer and Schendel, 1978). It is the functional strategies that define the operations and approaches within each functional department and, in turn, are translated into a sub-hierarchy of actions for implementation (Mintzberg, 1994).

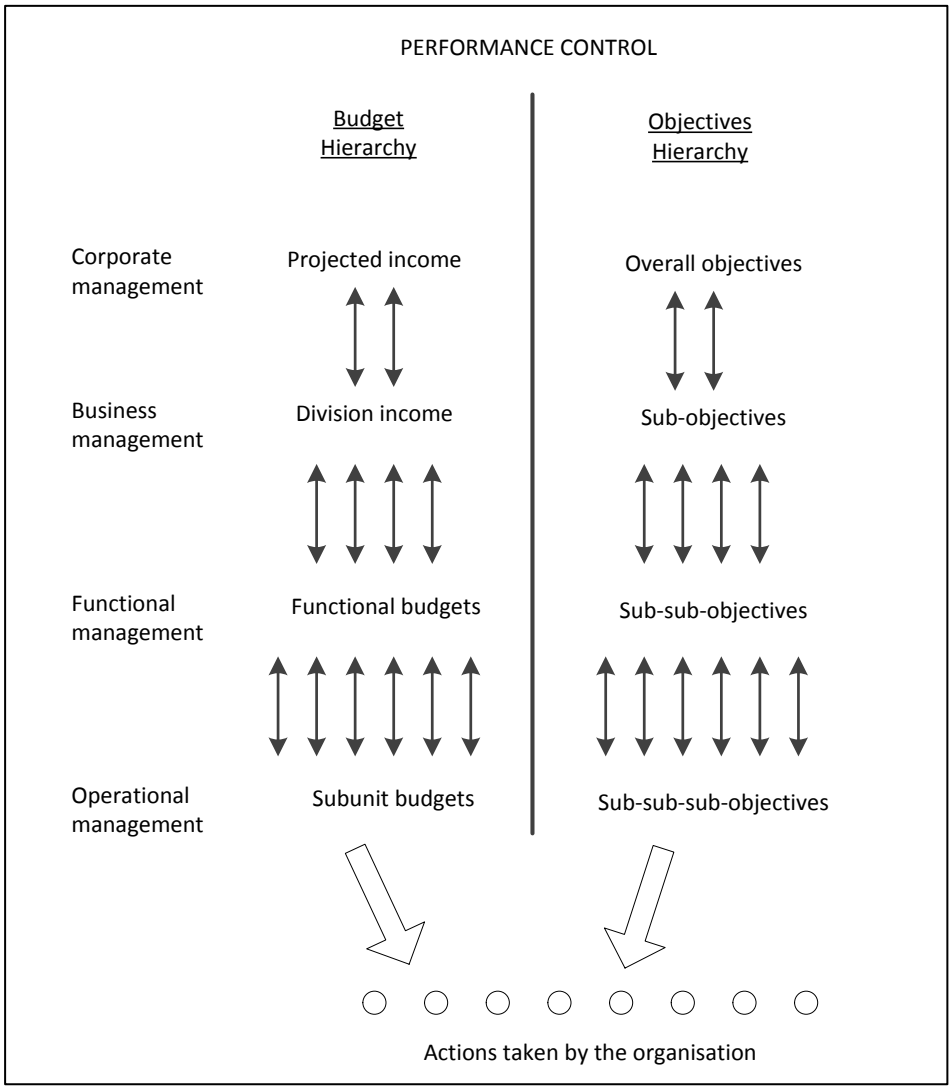

Figure 2.1: Planning hierarchy. *Source:* Mintzberg (1994)

Mintzberg (1994) presents a model of strategic planning, illustrated in Figure 2.1. The model demonstrates how strategic objectives formulated at the corporate level cascade down a hierarchy to be implemented as actions at the operational level. In explaining the model Mintzberg (1994) acknowledges the general assumption in strategic planning that objectives determined by senior management are implemented as articulated. However, research finds that strategies derive from a two way process, where objectives at the lower level impact on strategic objectives at the upper levels. Slack *et al.* (2006) presents a model illustrating how corporate objectives impact on business objectives, which influence operations strategy. The salient issue in this model is the recognition that circumstances, experiences and capabilities at the operational level reveal an emergent sense of what the strategy should be. Therefore, strategic actions of the

organisation are not only implemented from a top-down hierarchy, but also from bottom-up hierarchal influences.

2.5 Streams of project management research

Prior to discussing the varied models of strategic alignment of projects and project success, it is helpful to understand the difficulties that exist when seeking to implement organisational strategy through projects. This is explained through an overview of project management research, which according to Söderlund (2002) has evolved in two streams. With reference to the evolution of the discipline, these streams of research have been more or less influential in shaping modern project management practice and behaviour.

2.5.1 Quantitative stream of project management research

The first stream focuses on the mathematical approach of planning and control techniques developed in parallel by, both, the US Department of Defence (DoD) and the chemical industry between 1958 and 1959 (Morris, 1997). These efforts resulted in two of the most important early contributions to project management research, most notably the development of Programme Evaluation and Review Technique (PERT) by US Navy Special Projects and the Critical Path Method (CPM) by E.I du Pont de Nemours Company (Siemens, 1971; Archibald, 1987; Fondahl, 1987). On the apparent successful application of these techniques the US DoD developed further systems based tools, including publication of the DoD/NASA PERT/cost guide (1962) to be used by contractors on US defence projects.

However, as observed by Thomas (2006), many of the techniques used at this time were developed on an *ad hoc*, trial and error basis, rather than being a deliberate management activity. It was only due to the efforts of the US DoD themselves, that the concept of project management became well publicised, with CPM and PERT being the fundamental models of the concept. Despite these efforts, by the mid-60's, the preoccupation with quantitative planning techniques began to receive criticism (Packendorff, 1995). The reaction from contractors to adopt the new techniques was decisively negative and from a financial perspective, customers realised that the deterministic systems resulted in expenditure of considerable cost and effort by the contractor (Kerzner, 2003; Archibald, 1987). Moreover, researchers were also

questioning the underlying contribution of rational techniques to project success (Avots, 1969).

2.5.2 Human resource stream of project management research

In a shift from quantitative techniques, the second stream of project management research was concerned with human resource management, leadership and organizational theory. Cleland and Ireland (2006) identify two seminal papers that were influential to the development of the second stream. Firstly, the much cited paper published in the Harvard Business Review by Gaddis (1959), was the first to introduce the concept of project management as a recognised job description, outlining the leadership and responsibility role of the project manager. The second significant contribution, also published in the Harvard Business Review, described the growing trend in contemporary organisations towards functional teamwork approaches in organisational design (Fish, 1961). The contingency approach to organisational structures was also being developed during this period (Lawrence and Lorch, 1967), which was followed by Galbraith (1971), who described a series of organisational forms ranging from function, product/project, and the benefits of creating project teams from varied departments to form matrix structures.

The most influential movement in terms of establishing a project management discipline came from the formation of the Project Management Institute (PMI) who sought to homogenize the practice by developing generic sets of standards in the form of the Project Management Body of Knowledge (PMI, 1987). The aim of these guides was two-fold. Firstly, to formally standardise the growing discipline of project management by presenting a set of guidelines that are deemed to be best practice. Secondly to accommodate the widening discipline of project management by presenting a generic set of tools and management methods. Although criticised for its mechanistic process and instrumental rationality (Hodgson and Cicmil, 2006), it is this body of knowledge with the emphasis on a standardised rational approach that underpins project management practice.

2.5.3 Strategic stream of project management research

The review of the literature finds that a third stream of research evolving during the late 1980's, as project management practices transferred from construction and engineering into mainstream management. This shift saw a widening of the discipline where project

management became the dominant model in many organisations for strategy implementation (Pellegrinelli and Bowman, 1994; Van Der Merwe, 2002; Hauc and Kovac, 2000). The extension of project management practices also saw Management By Projects (MBP) emerge in response to the growing demand to provide organisations with the flexibility and response to compete under turbulent conditions (Gareis, 1989). This approach gives the advantage of enabling organisations to employ project management principles, used on large external projects, for smaller internal projects (Sharad, 1986; Gareis, 1991). One of the salient benefits presumed in the literature is that the project management approach enables organisational strategy to be implemented more efficiently and effectively, thus shorting the time from strategy formulation to strategy implementation (Hauc and Kovac, 2000; Partington, 1996). By employing a project management approach to realising organisational strategies, businesses are able to partially eradicate the traditional bureaucratic, mechanistic structures, which according to Burns & Stalker (1961) are inherently resistant to strategic change.

Despite these developments, the current conceptual base of project management continues to attract criticism for its lack relevance to current business practice (Packendorff, 1995; Maylor, 2001), the dominant allegiance to its '*hard paradigm*' (Pollack, 2007: 226) and the assumption in main stream project management literature that a single theoretical base exists to adequately explain the actual management of projects (Winter *et al.*, 2006b). This is in contrast to the field of strategy, where there exist varied opinions and schools of thought to explain the concept (Chaffee, 1985; Mintzberg, 1987; Mintzberg *et al.*, 1998). Indeed, the homogenization of project management practice through the varied influential bodies of knowledge has resulted in project management becoming a mechanistic process driven by instrumental rationality (Hodgson and Cicmil, 2006). Moreover, the criticism in contemporary literature of the widespread assumption that all projects are fundamentally similar and can be managed by a universal set of project management activities (Evaristo and van Fenema, 1999; Winter *et al.*, 2006b; Blismas *et al.*, 2004; Dvir *et al.*, 1998) has implications for the strategic alignment of projects and project success.

2.6 Project success criteria

Although project success has been discussed extensively within the project management literature, the concept of success remains, both, subjective and ambiguous, with little

agreement concerning the criteria by which success of a project should be measured (Pinto and Slevin, 1988; Freeman and Beale, 1992). The review of literature finds that the majority of discourse on project success has tended to focus on factors that need to be in place for success to be realised (Ika, 2009). However, as cautioned by De Wit (1988), efficiency in managing projects may contribute to project success, but does not necessarily result in the project being successful. This is because varied stakeholders involved in a project will have different opinions on what constitutes success and, therefore, make assessment on varied success criteria (Davis, 2014).

Traditionally, the dominant discourse within the project literature has long been on achieving the specified project objectives within the *'iron triangle'* of time, cost and quality (Oisen, 1971). Project management standards have since extended this criteria to include project performance (BSI, 1996; APM, 1995). In taking a converse perspective, Avots (1969) proposed that if a project exceeds its completion time, exceeds it budget or does not meet the quality and performance criteria determined in the specification, the project is deemed a failure.

More recently, the concept of project success has been perceived to involve broader objectives from the viewpoint of stakeholders throughout the project life cycle (De Wit, 1988). Cleland (1998) defines the 'project stakeholder' as

> *"...people or groups that have, or believe they have, legitimate claims against the substantive aspects of the project. A stake is an interest or share or claim in a project; it can range from informal interest in the undertaking; at one extreme, to a legal claim of ownership at the other"* (Cleland, 1998: 55).

Internal stakeholders are those stakeholders within the project organisation who play an active role in the development and implementation of the project, and external stakeholders are the groups and individuals who may not actively participate in the project, but may influence the project outcome in either a negative or positive way (Pinto, 2013; Winch, 2007).

In their study of 94 projects to determine patterns of causes of project failure, Pinto and Mantel (1990) identify three success criteria, which includes: 1) implementation of the project; the perceived value of the project; and client satisfaction of the delivered project. Whereas, Westerveld's (2003) Project Excellence Model considers five

subjective measures of success from varied stakeholder groups that include the client, project personnel, end users, contracting partners, and external stakeholders.

In accepting that success of a project will be defined by the perception of varied stakeholders, a number of authors began to draw distinction between the efficiency in the implementation of the project and the perceived value to the organisation as a result of implementing the project. In Baccarini's (1999: 25) theoretical framework, two components of project success are identified:

- **Project Management Success:** Focuses upon the project process and, in particular, the successful accomplishment of cost, time, and quality objectives. It also considers the manner in which the project management process was conducted.
- **Product Success:** Considers the effects of the project's final outcome.

Despite the distinction, Collins and Baccarini's (2004) empirical study of 150 Australian project managers found that the traditional project management objectives of time, cost and quality was still dominant in the Australian project management community, with only a small percentage perceiving the meeting of owners needs as a success criterion.

In their empirical study of success factors across 71 large multi-national organisations, Cooke-Davies (2002) also draw on De Wit's (1988) differentiation between *'project management success'*, as being measured against the traditional gauges of project performance, and *'project success'* as being measured against the overall objectives of the project. Whereas, Lim and Mohamed (1999) took a micro and macro perspective in their study of project professionals in Kuala Lumpur. Within their framework, they suggest that the micro viewpoint considers project achievements at the smaller component level. This included the measurable project management objectives of time, cost, quality and performance. In contrast, the macro perspective of project success addresses the question of whether the original project concept has been achieved or not.

In taking a strategic perspective Shenhar *et al* (2001) presents a model illustrating four dimensions of project success from the findings of an empirical study into project managers within the technology sector. The model shown in Figure 2.2 demonstrates the time dependence of each dimension, with the relative importance of each dimension varying during and after completion of the project.

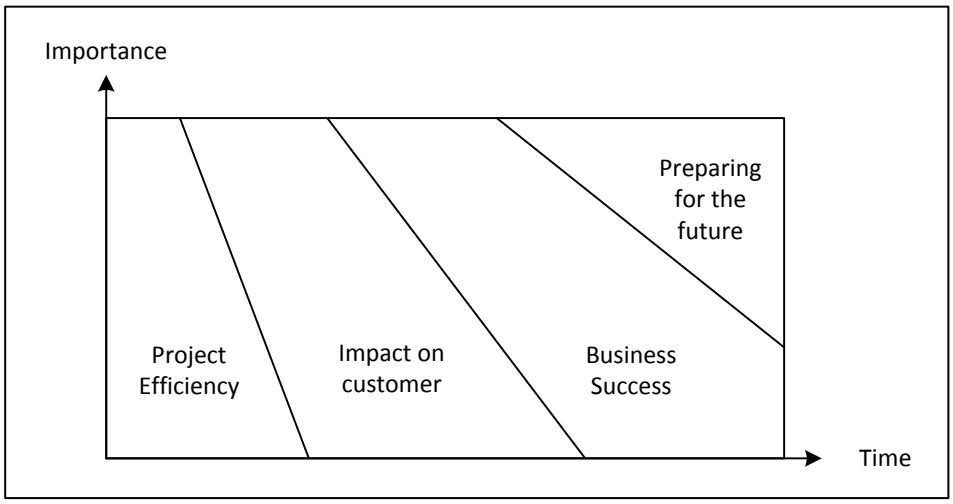

Figure 2.2: Relative importance of success dimensions. *Source:* Shenhar *et al.* (2001)

- The first dimension considers the efficiency in delivering the project within the time, budget and requirement goal. Shenhar *et al.* (2001) advises that this dimension can be assessed only in the very short-term during the execution of the project and immediately after its completion, and was considered critical to all project managers in expressing the competence in which the project was managed.

- The second dimension addresses the importance placed on client requirements and meeting the client needs. This includes the meeting of performance measures, functional requirements, and technical specifications. This dimension can only be assessed a short time after the project has been delivered to the client and the customer is using the final output.

- The third dimension addresses the immediate impact the project has on the business, in terms of sales, income and profit, as a result of investment into the project. This dimension can only be assessed after a reasonable time to achieve sales, usually one or two years after handover of the project.

- The fourth dimension addresses the issue of preparing the organization and technological infrastructure for the future, and questions if the organisation has explored new opportunities for further markets, ideas innovations and future products as a result of the project. According to Shenhar *et al.* (2001), this dimension can only be realistically assessed after a period of, at least, two to five years.

The significance of Shenhar's *et al's* (2001) framework is that it highlights the strategic value of projects to an organisation. In revisiting De Wit (1988), Cooke-Davies (2007) argues that a project is successful only if it delivers the benefits that were envisaged by the stakeholders that agreed to undertake the project in the first instance. Similarly, Hartman (2000) suggests that a project is successful if it aligns with organisational strategy. Jugdev and Muller (2005) also argue that the narrow focus on achieving the time, cost and quality criteria results in project management only providing operational value to the organisation and calls for need for further investigation into owners attitude towards project success. The salient factor is that it is the owner who is responsible for the project delivering the organisational strategy. Therefore, it is the owner that affects the view of a project within an organisation and therefore influences the perception of project success (Davis, 2014). This is despite efficient delivery of the project within the time, cost, quality and performance criterion.

2.7 The strategic alignment of projects

As discussed in Section 2.5.3, a key theme evolving from the third stream of project management research is the use of projects as a vehicle to implement organisational strategy (Pellegrinelli and Bowman, 1994). This theme recognises that projects are initiated to achieve business results (Dye and Pennypacker, 2002; Patanakul and Shenhar, 2012). Cleland and Lewis (2006) emphasise that projects do not stand alone in the enterprise, rather they are 'building blocks' of the organisational initiatives.

Consequently, a number of scholars have explored methods to ensure that projects deliver the organisational strategic intentions. The majority of studies investigating the strategic alignment of projects have focused their attention on project portfolio management (Archer and Ghasemzadeh, 1999; Aalto, 2000). Within this stream alignment is maintained through attention to evaluation, prioritisation and selection of projects that fit with the strategic objectives of the organisation (Meskendahl, 2010; Aalto, 2000; Cooper *et al.*, 1999). More recently, in their longitudinal study of senior management, Unger *et al.* (2012), defined the project portfolio through termination of projects that no longer conformed to the corporate strategy.

A second stream considers how project processes are aligned. Using case study methodology, Milosevic and Srivannaboon (2006) develop an empirically-based framework of aligning the competitive elements of the business strategy, according to

Porter's (1980) generic strategies, to the elements of project management adapted from Shenhar's (2004) 'Strategic Project Leadership' framework. According to Milosevic and Srivannaboon's (2006) framework, a firms business strategy drives the project management elements of strategy, organization, process, tools, metrics and culture. Similarly, in their empirical study of four organisations, Cooke-Davies *et al* (2009) proposed that in order to maximise value, a fit between the strategic drivers of the business strategy and the project management systems, grouped under policy, people, structure and process, must exist. Furthermore, Budayan *et al* (2015) identifies a relationship between differentiation strategies in the construction industry and project management processes, in particular, time management, cost management and quality management.

2.7.1 Hierarchy of project objectives

Following Hofer & Schenel's (1978) hierarchy of strategy and Mintzberg's (1994) hierarchy of strategic planning, a number scholars have developed hierarchical models of project objectives, demonstrating how organisational strategy is translated into projects.

Archibald (1988) presents a hierarchy, shown in Figure 2.3, illustrating how strategic objectives set at the policy level cascade down through strategic and operational levels to be implemented as projects. Within the model, policy objectives refer to the overall goals of the organisation, established by senior management. The objectives at this level corresponds to the corporate management objectives in Mintzberg's (1994) model, shown in Figure 2.1. The second level of the hierarchy, corresponds to the business management objectives in Mintzberg's (1994) model. These are the sub-objectives that support the corporate level objectives. Youker and Brown (1998) refer these as the strategic objectives of the project. Finally, the operational level relates to the project objectives. Within Archibald's (1988) model these are defined in terms of the deliverables of the project, as described in the detailed project strategies and plans.

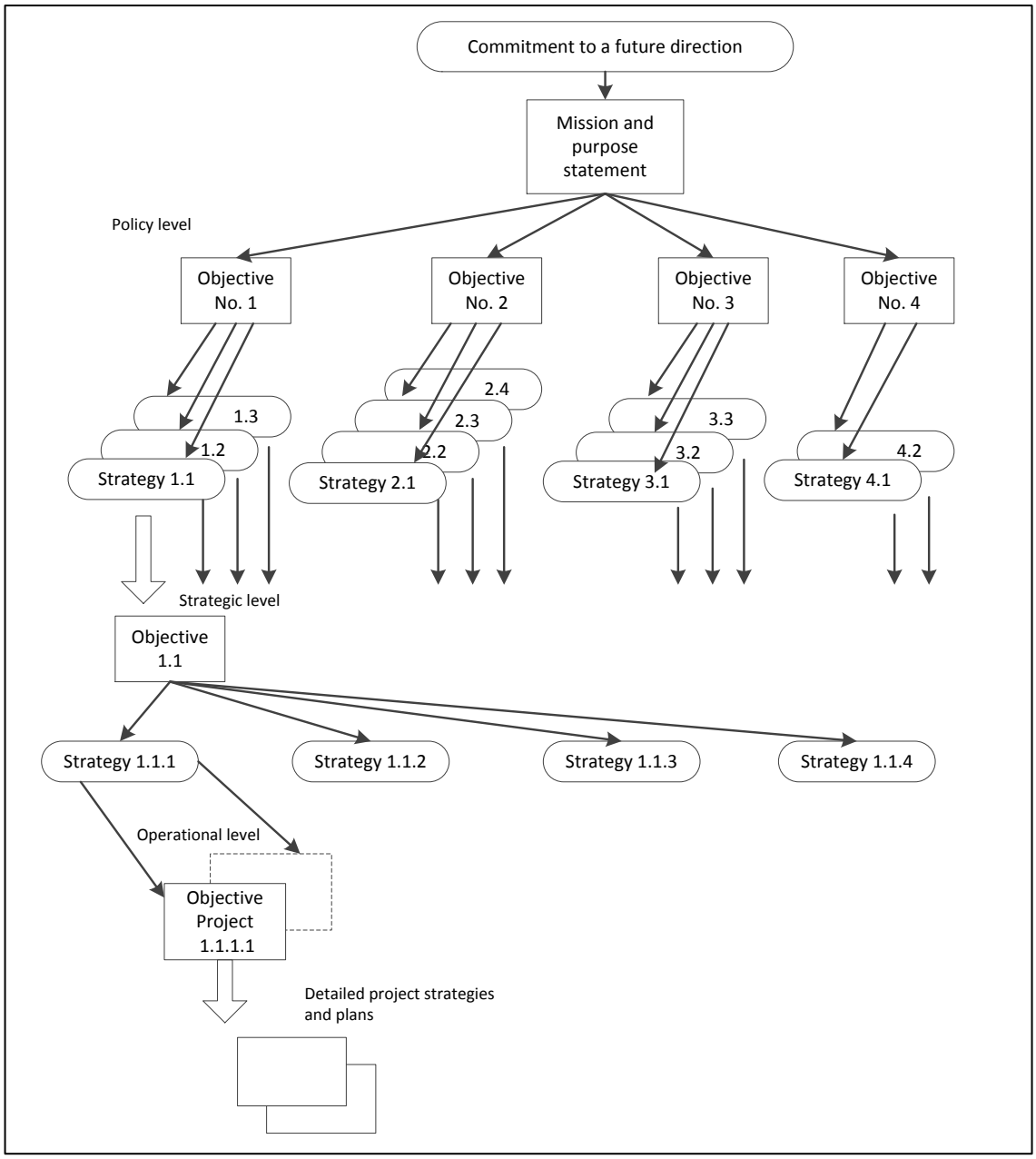

Figure 2.3: The Hierarchy of Objectives, Strategies and Projects. *Source:* Archibald (1987)

In his discussion of strategic planning, Kerzner (2004) presents a model showing how corporate strategic plans flow horizontally across a number of SBU's, and vertically to support plans and budgets, thus recognising the individual objectives of each SBU within the organisation. In adapting Turner's (1999) model, Morris and Jamieson (2005) also present a model depicting the sequencing from the business strategy to the individual objectives of the project team members. As shown in Figure 2.4, the model demonstrates how the business strategy consists of a portfolio of programmes and projects that need to be aligned to realise the business objectives.

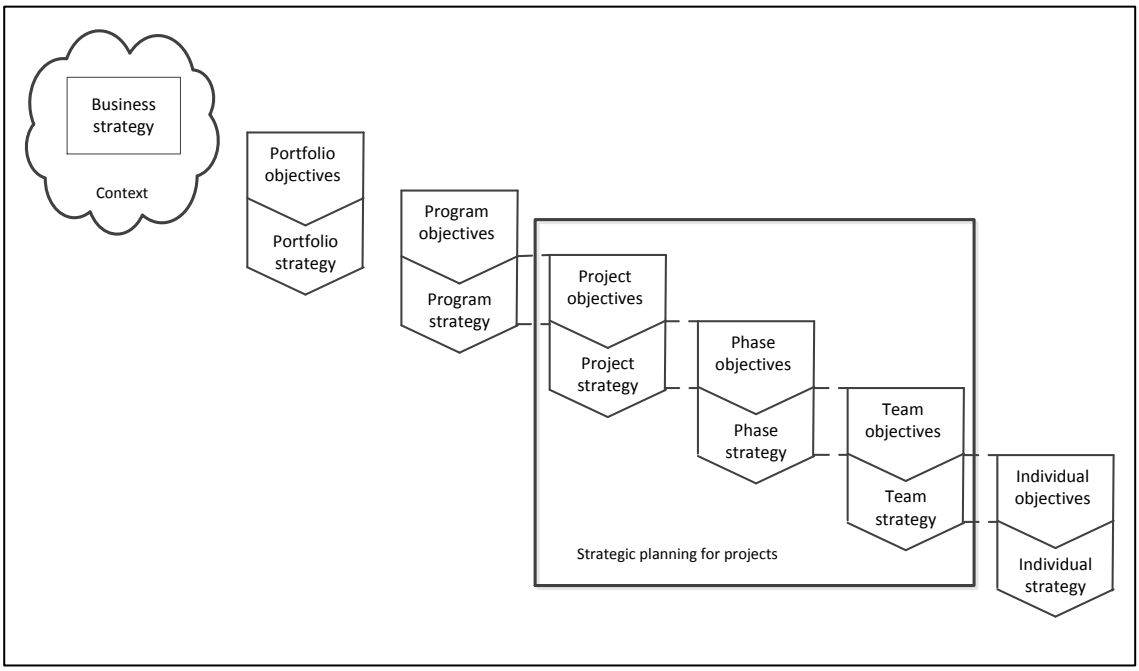

Figure 2.4: The Hierarchy of Objectives, Strategies and Projects. *Source*: Morris and Jamieson (2005). Adapted from Turner (1999)

Within their empirical study across four organisations into the way corporate strategy is created and moved into projects and programmes, Morris and Jamieson (2004) found that goals and strategies created at the corporate level cascade across SBU's, consistent with Turner's (1999) and Kerzner's (2004) models. In turn, each SBU, in conjunction with corporate strategy planners, develops their own business goals and strategies. In their empirical study, Morris and Jamieson (2004) also found, that in all four cases the programme and project team, of each subsequent SBU, developed project strategies that aligned with the business and corporate strategy.

This is in contrast to Young *et al's* (2012) single case study into the effectiveness of project management within the investment section of public sector offices. They found that programme and project management processes were not focused on the realisation of strategic goals. Instead, the focus of the business units was on individual asset investment, with little emphasis of alignment with higher-level strategies. However, in a follow up study, Young and Grant (2015) found that, over a period of time, some projects did make a contribution to strategic goals, consistent with Shenhar's (2001) model in Figure 2.2.

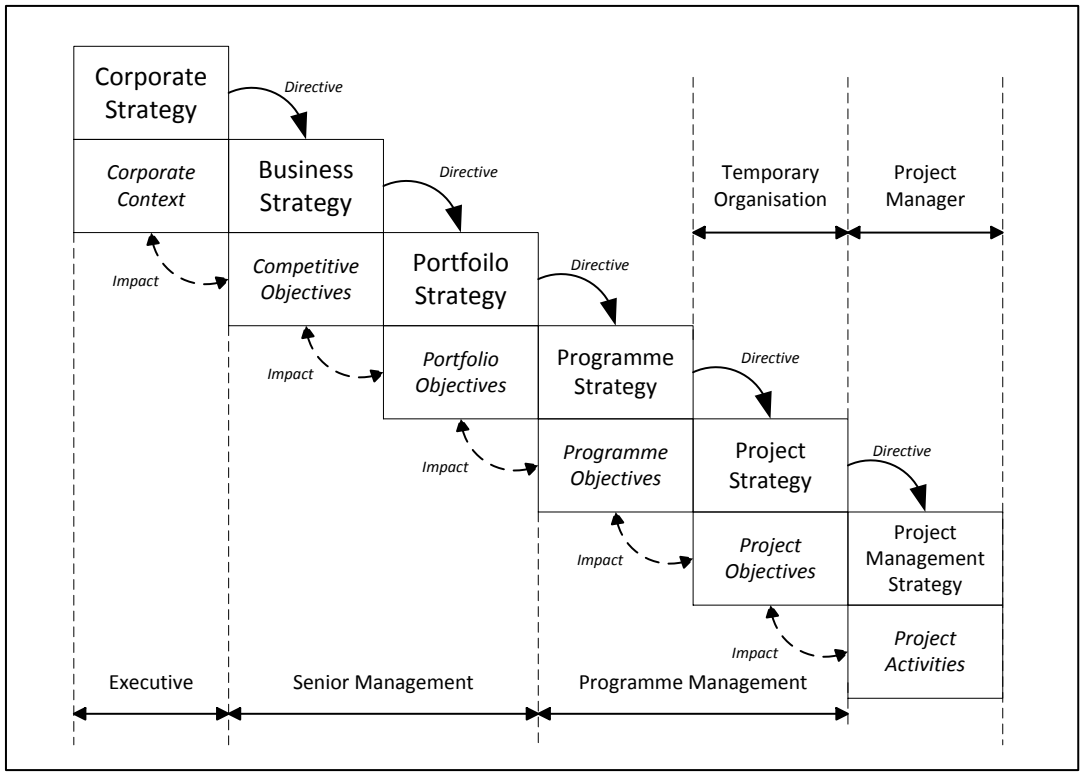

Figure 2.5: Hierarchy of Strategic Objectives. *Source*: Haniff & Fernie (2008)

In further adapting Morris and Jamieson's (2005) model, Haniff & Fernie (2008) present a hierarchy of strategic objectives demonstrating how the context of the corporate strategy is communicated down through the strategic hierarchy to be translated into project management activities. The model shown in Figure 2.5 recognises the varied levels of strategy that occur within an organisation. Besides the varied SBU's and their individual portfolios, Haniff and Fernie (2008) show how each programme consists of number of interrelated projects. Alignment at the programme level is maintained through management and coordination of the related projects in response to changes in the business environment (Lycett *et al.*, 2004; Pellegrinelli *et al.*, 2007).

Consistent with Archibald's (1988) hierarchy of objectives, detailed project strategies and plans are developed at the operational level to achieve the project and business objectives. However, as shown in Haniff and Fernie's (2008) model, implementation of the project becomes the responsibility of a project manger that has had little, or no, involvement in the strategy formation process (Crawford, 2005). As such, project decisions are based on senior management direction, external influences and the bounded rationality of the project manager (Cyert and March, 1963).

Although prescriptive, the hierarchy in Figure 2.5 demonstrates that the strategic alignment of projects is not a straightforward process of communicating policy objectives from the corporate to the operational level. Within the hierarchy, strategic intentions filter down through a number of management levels, complex interactions and processes. Not only are strategies communicated and translated into projects from the top down, but the impact and affect of the lower level strategic objectives influence the strategies at the upper levels, consistent with Slack *et al's* proposition (2006).

2.7.2 Project strategy

Morris and Jamieson (2005) caution that hierarchies of strategic objectives only depicts the intended, deliberate sequencing of corporate strategy to projects, and does not take into consideration the emergent nature strategy. The significant limitation of the models discussed in Section 2.7.1, is the notion of a single, unified project strategy developed to realise the strategic intentions of the organisation. Presented within the hierarchy of strategies (Morris and Jamieson, 2005; Haniff and Fernie, 2008), project strategy is defined as *"a direction in a project that contributes to success of the project and its environment"* (Artto *et al.*, 2008: 8).

The dominant discourse within the project strategy literature makes the assumption that the project is under the control of a single parent organisation (Shenhar *et al.*, 2007; Turner, 1999; Morris and Jamieson, 2005; Cleland, 2007; Milosevic and Srivannaboon, 2006). As such, projects lack the autonomy to develop strategies or mechanisms independently (Lampel and Jha, 2004). Instead the project serves as an '*obedient servant'* to the parent organisation and conforms to the parent organisations directions, in the implementation of the business strategy (Artto *et al.*, 2008: 49).

In their review of project strategies, Artto *et al.* (2008) conclude that it is not always appropriate for a single organisation to determine the strategy or dictate the operations of a project. Individual projects operate in varied competitive environments and establish their own project strategy (Yang, 2012). Loch's (2000) study of 90 new product development projects from multiple business units illustrate how autonomous projects contribute to the strategic positioning of a parent organization. Artto *et al.* (2008) also recognises the body of literature that views project strategy as a project execution strategy, whereby the authority of the project is limited to designing and implementing strategy for the management of the project, but not in the actual overall

business context that the project is designed to implement. Lam *et al* (2004) explains this through design and build projects in the construction industry, where the client articulates their requirements and the project strategy is developed to execute the directives in accordance with the client specified success criteria.

Artto *et al.* (2008) also acknowledge the existence of projects that are positioned in a complex organisational environment with several powerful stakeholders, rather than one strong parent organisation. Such an arrangement is typical within large-scale construction projects that are executed in a consortium of several firms (Davies *et al.*, 2009). Within these complex environments, the project strategy becomes self-established and is related to the projects own governance structure, rather than an individual organisation (Floricel and Miller, 2001; Miller *et al.*, 2014). However, as suggested by Haniff and Fernie (2008) the notion of self-originated project strategy is not confined to large-scale construction projects. Indeed, any construction project where there exist multiple participating organisations will develop its unique project strategy in order to execute the project. The difficulty occurs when the interests of stakeholders are, inevitably, varied (Toor and Ogunlana, 2010), which influences the perceptions of project success and impacts on the alignment of strategic objectives.

2.8 Conclusion to chapter

A review of the extant literature into the strategic context of projects finds a number of limitations when seeking to align projects with organisational strategy. Firstly, from a theoretical perspective, there appears to be a gap between strategy and project management concepts. The review has identified varied perceptions and schools of strategy that exist to explain the concept (Mintzberg *et al.*, 1998; Chaffee, 1985). Section 2.3 of the literature review also finds that the focus of strategic management literature tends to be on the formation of organisational strategy. In contrast, as discussed in Section 2.5, the dominant strand in the project management literature is the rationale, deterministic model that governs the single project paradigm (PMI, 1987). This model focuses on the implementation of projects bounded by the success criteria of time, cost and quality, and makes little reference, or has any involvement, in the strategy formation process.

Secondly, Mintzberg and Waters (1985) propose that strategies emerge over time, rather than being a deliberate course of progression. Despite this, models depicting a strategic

hierarchy of objectives assume that strategy is formulated at the higher level, cascades down and is translated into projects for implementation (Archibald, 1988; Youker and Brown, 1998). Typically, strategic plans are subject to environmental influences at each level of the hierarchy. However, the ridged processes inherent within the project management bodies of knowledge, do not consider the emergent nature of strategy. Instead, within a hierarchy of strategic objectives, projects are 'given' to a project manager for implementation, regardless of the emergent strategies or environmental forces that potentially impacts on the perceived success criteria.

Finally, models of strategic fit tend to only consider the alignment of strategic objectives within the boundaries of a single parent organisation, where the project strategy is formulated to implement the strategic intentions of one organisation. However, Section 2.7.3 identify contexts where multiple organisations collaborate on a single project, each seeking to realise individual strategic intentions. Not only does this have implications for the concept of project strategy, but also for the concept of project success. As discussed in Section 2.6, multiple stakeholders involved in a project invariably have different success criteria. This includes the success criteria of different organisations involved in a project and the varied success criteria within each different hierarchical level of an organisation. This complexity is discussed further in the following chapter and explored within the study.

CHAPTER 3
TEMPORARY ORGANSITIONAL FORMS

3.1 Introduction to chapter

The previous chapter provided a review of the theory underpinning research in the strategic alignment of projects. This chapter provides a review of the extant literature on temporary organisational forms created to implement organisational strategy through projects. In particular, the review focuses on the behaviour of temporary multi-organisations within the construction industry.

The chapter begins by reviewing the early discourse on temporary systems from within the organisational behaviour literature. This is followed by a review of Lundin and Soderholm's (1995) basic concepts that contribute to the theory of temporary organisations. Extending Lundin and Soderholm's (1995) concept of teams, theories of leadership applied to temporary organisations is then examined. Variations of temporary organisational forms from within the literature are considered, before introducing the temporary multi-organisation. Within this, the issue of client complexity within the context of the construction industry is discussed, followed by critical examination of procurement strategies and governance mechanisms in the strategic alignment of projects. The chapter concludes with identification of the research gaps, leading to the research questions of the study and development of a conceptual model to guide the methodology in Chapter 4.

3.2 Temporary organisational forms

The earliest published research on the topic of temporary organisational forms is accredited to that of Miles (1964; 1977), who recognised the difficulties 'permanent' systems face when implementing change within the context of educational innovations. Concerned with rapid societal changes within the United States at the height of the Cold War, Bennis (1965) foretold of an increase in the use of '*temporary systems'* to implement change within wider society. Drawing on the distinction between organisational types proposed by Burns and Stalker (1961), Bennis and Slater (1968) argues that temporary systems are more likely to be organised within an organic structure, where the arrangements are more fluid, rather than the mechanistic model, in which the structure is more ridged. In predicting a growth in project-based

organizational forms, Bennis and Slater (1968) define *"adaptive structures"* as consisting of:

> *"Adaptive, problem-solving, temporary systems of diverse specialists, linked together by coordinating and task-evaluating executive specialists in an organic flux – this is the organization form that will gradually replace bureaucracy"* (Bennis and Slater, 1968: 74)

Palisi (1970) also agues, that as a consequence of their relatively flat hierarchical structure and specific goal focus, *"transitory organizations"* are likely to be less bureaucratic than permanent organisations. Thus, there is less reliance on authoritarianism and hierarchical power in the decision making-process (Palisi, 1970; Miles, 1964). Bennis and Slater (1968) further propose that the structure of a temporary system leads to a reduction in intergroup conflict, as a result of greater collaboration and increased motivation, due to the conditions under which individuals can gain increased satisfaction with the task itself.

Early empirical studies into the application of temporary systems included Keith (1978), who investigated the role clarity of teachers in the development of "*task forces"* created to implement change in metropolitan schools. Whereas, Lanzara (1983) provided an account of the role *"ephemeral organisations"* played in disaster recovery, following an earthquake in Southern Italy. However, it was Goodman and Goodman (1976) who were the first to present the characteristics of the temporary system within the organisational context. In recognising the use of *ad hoc* groups formed to produce theatre projects, they define a temporary system (or organisation) as *"a diverse set of skilled people working together on a complex task over a limited period of time"* (Goodman and Goodman, 1976: 494).

Goodman and Goodman (1976) suggest that temporary systems are created in response to four concurrent problems organisations face in the accomplishment of specific tasks. Firstly, when the task is of such complexity that it requires an integrated effort of organisational members to complete it. The secondly problem concerns unique tasks that do not fit with regular processes and procedures of the permanent organisation. Thirdly, when the tasks are of critical or significant importance to the organisation that a new structure needs to be created to manage them. Fourthly, when the task is defined in terms of specific goals, thus, setting a time limit to the task so the permanent organisation will know when it is complete.

The emergence of temporary organisations within contemporary project management literature follows Packendorff's (1995) review of the main deficiencies within the theoretical field of project management. Published within a special edition of the Scandinavian Management Journal on *'Temporary Organisations and Project Management'* (Lundin, 1995), Packendorff's (1995) main concern was that within the general systems perspective, projects are explained in terms of inputs and outcomes. Thus, neglecting the strategic rationale for implementation of the project in the first instance. In proposing a change in metaphor for the project from "*a temporary endeavour"* (PMI, 1987) to a *"temporary organisation"* (Packendorff, 1995: 321), Packendorff (1995) further argues that when projects are regarded as tools, the various motives of actors for participating in the project are overlooked. Turner and Muller (2003) also propose that viewing the project as a temporary organisation introduces many of the elements of project management, including dealing with the conflict of interest between the various stakeholders, realising the complex roles of the project manager, and the implementation of information, communication and monitoring systems.

3.3 Theory of temporary organisations

The most cited explanation of the temporary organisational form comes from Lundin and Soderholm (1995). Within their paper, also published within the Scandinavian Management Journal, Lundin and Soderholm (1995) outline a theory of temporary organisations through the examination of four basic interrelated concepts of *'time'*, *'task'*, *'team'* and *'transition'*, to demarcate between temporary organisational forms and the environment of the permanent organisation sponsoring the project. Each concept is explored, with regards to the extant literature, in the following sections.

3.3.1 Time

Time is considered to be the distinguishing feature of the temporary organisation (Lundin and Soderholm, 1995). However, within the literature there exist two perspectives regarding the concept of temporariness. One approach views temporariness as the short duration of the project and the requirement for immediate goals (Palisi, 1970). Whereas, the other viewpoint perceives temporariness as the short participation of the actors in the temporary organisation (Lanzara, 1983). Bakker *et al* (2013) observe that the nature of temporary organisations creates an awareness among actors that the

project is limited in scope by a deadline. Consequently, termination of the project is imminent, at which point the team will disband (Baker and Faulkner, 1991; Saunders and Ahuja, 2006; Morley and Silver, 1977).

A number of scholars have investigated the consequences of limited duration on both, the behaviour and the social integration of team members within a temporary organisation. For example, Lindkvist (2005) proposes that a short project duration does not allow adequate time for actors within temporary originations to develop communities of practice, share task-relevant knowledge or become *"tightly-knit"* (Lindkvist, 2005: 1189), in a social structured sense. Morley and Silver (1977) also found that the limited duration of projects within the film industry did not allow sufficient time to develop task familiarity and good working relationships among temporary organisational actors. While, Bakker *et al* (2013) argue that actors in temporary organisations with short duration, focus attention on the immediate present and are less likely to be concerned about the impact of current team behaviour in future situations.

Other researchers have considered the impact of the limited lifespan of the temporary organisation on team members. Turner and Muller (2003) propose that the transient nature of the temporary organisation, where there exist a defined beginning and end, creates a pressure of urgency among team members to deliver the desired outcomes within the specific timescales. In recognising the stress caused by the pressure of limited time, Morley and Silver (1977) advocate increased collaboration and interpersonal support between colleagues to alleviate the anxiety. Conversely, Bryman *et al.* (1987b) suggest that, whereas, longer projects allow more time for fostering group relations, the greater urgency of shorter projects engenders an orientation to the task. Consequently, within Bryman *et al's* (1987b) empirical study of construction projects, it was found that leaders within temporary organisations were focused more on the task to be accomplished, rather than relationships between actors. Similarly, in Saunders and Ahuja's (2006) conceptual paper, they argue that temporary teams will be primarily concerned with the effective accomplishment of current tasks, rather than building long-term relationships. This is because temporary teams are highly goal driven and less concerned with developing long-term efficiencies in team processes. Significantly, Saunders and Ahuja (2006) also propose that, within the time concept, members of

temporary teams tend to be rewarded for successful completion of task over social ties and operational efficiency.

3.3.2 Task

The second concept in the theory of temporary organisations concerns the tasks that are executed in order to realise goals. Goodman and Goodman (1976) propose that the case for the creation of a temporary organisation is motivated by the unique tasks that are required to be accomplished. According to Lundin and Soderholm (1995) the temporary organisation is dependent on one, or a very limited number of, defined tasks. It is therefore the task definitions that provide the "*raison d'être"* for its existence (Lundin and Soderholm, 1995: 438). They further determine that the task and devotion to goals are more important to participants of temporary organisations, in comparison to employees within permanent organisations.

The assumption is made that tasks performed by the temporary organisation must have a degree of complexity (Meyerson *et al.*, 1996). Some scholars measure this in terms of the difficulty of the work to be accomplished (Liu, 1999; Hanisch and Wald, 2011). Whereas, Lundin and Soderhulm (1995) measure the complexity of tasks in terms of uniqueness. Within their theory, Lundin and Soderhulm (1995) draw a distinction between temporary organisations that focus on performing tasks that will be repeated in the future, and temporary organisations that are created for one single and specific situation that will not occur again. It is this latter perspective of temporary organisations that is prominent within the literature.

Literature conveys the presumption that tasks performed by temporary organisations are so unique that they do not lend themselves to repetition (Goodman and Goodman, 1976; Gann and Salter, 2000; Prencipe and Tell, 2001). Moreover, it is suggested that the more unique the project task, the fewer actors, within the temporary organisation, will have the limited and immediate knowledge of how to execute them (Lundin and Soderholm, 1995; Linderoth, 2002). Despite benefits of employing temporary organisations to perform unique tasks (Miles, 1964), some authors raise concern regarding the impact of performing unique, non-repetitive activities on organisational learning. According to Ibert (2004) the unique conception of projects limits the possibility of generating lessons learnt. Brady and Davies (2004) also advise that the perspective conceals many potentially transferable lessons, knowledge creation and

development of project capabilities. Moreover, Grabher (2004) warns that knowledge accumulated in the course of a project is at risk of being dispersed, as the temporary organisation disbands and members are assigned to different tasks.

However, in contrary to Liu's (1999) proposition, Hanisch & Wald (2011) logically argue that task complexity does not necessarily equate to the complexity of a project. Project complexity has its routes in general systems theory and the notion that an organisation can be likened to that of an open system of independent, interacting component parts (Boulding, 1956; Von Bertalanffy, 1968; Katz and Khan, 1966). At a basic level, complexity refers to the number of components in the system, or the number of combinations that need to be considered in making a decision (Sterman, 2000). Projects are defined as complex systems as they involve a number and of variety of components and interdependencies among them (Davies and Mackenzie, 2014; Shenhar and Dvir, 1996). This includes the size of the system, the arrangement of hierarchical structures, and the complex social systems within a project (Bresnen *et al.*, 2005; Baccarini, 1996). In recognising the numerous interactions within a project, Bakhshi *et al.* (2016) advise that complex systems display a variety of behaviours, including self-organisation, emergent properties, and non-linear behaviour that is often counter-intuitive. Therefore, taking into consideration the number of interactions within a project, it can be argued that task complexity is but one view of complexity within the context of a project (Hanisch and Wald, 2011).

3.3.3 Team

Closely related to the concept of task is the design of the temporary organisation. The unique characteristic of the temporary organisational form is that it typically consists of individuals with diverse skills that are temporarily grouped together to perform specific, complex tasks (Bakker *et al.*, 2013). General project management texts suggest that selection for membership of the team should be based on the necessary skill set required to complete the task (Larson and Gray, 2014), whereas other authors suggest that selection of team members is based on interpersonal skills and competences (Bennis and Slater, 1968; Bryman *et al.*, 1987a). It is also proposed, that in many cases, actors in temporary organisations might have never have worked together in the past, and most probably will not work together on future projects, or at least do not anticipate future collaboration beyond the life span of the temporary organisation (Bennis, 1965; Goodman and Goodman, 1976; Saunders and Ahuja, 2006).

However, Mohammed and Nadkarni (2011) warn that *"temporal diversity"* within temporary organisations is considered to be a "*double-edged sword"* (Mohammed and Nadkarni, 2011: 489). From one perspective, authors have contended that a multi-disciplinary team enhances effectiveness by balancing multiple team performance and creating synergy (Pinto, 2013; Larson and Gray, 2014). Conversely, other authors have observed that differentiation can create ambiguity and conflict among team members (McGrath, 1991). Furthermore, according to Lindkvist (2005), when the temporary organisations consists of a mix of individuals with highly specialized competencies, there is difficulty in establishing shared understanding or a common knowledge base.

The main area of concern within the concept of teams is the inadequate time available for development and integration. Within temporary organisations, individual actors lack the time to engage in the usual forms of confidence building activities that contribute to the development and maintenance of trust found in the more traditional, enduring organisational forms (Meyerson *et al.*, 1996). Despite this, a number of scholars argue that teams are, in fact, able to overcome obstacles and develop levels of trust (Robert Jr *et al.*, 2009; Guangquan *et al.*, 2007).

Meyerson *et al.* (1996) explains this through the concept of *'swift trust'*, which they define as a *'unique form of collective perception and relating that is capable of managing issues of vulnerability, uncertainty, risk and expectation'* (Meyerson *et al.*, 1996: 167). Saunders and Ahuja (2006) attribute swift trust, in a temporary organisation, to the fact that team members primary concern is the effective accomplishment of tasks. They argue that through the concept of swift trust, team members act as if trust were present from the start of the project, thus enabling them to take action with the uncertainty, ambiguity and vulnerability that arise while working on complex interdependent tasks with individuals they have never interacted with before. Researchers further propose that, in projects where there is not enough time to slowly build trust, team members will assume trustworthiness among fellow actors and begin working as if trust was present from the start (Jarvenpaa *et al.*, 1998; Jarvenpaa and Leidner, 1999; Powell *et al.*, 2004).

However, the defining characteristic of teams within temporary organisations is that members are only assigned temporarily to the project. Lundin and Soderholm (1995)

advise that actors within temporary organisations have a functional department or organisation to which they are involved. As such, members are dependent on other organisational contexts besides that of the temporary organisation. In many cases this is not an issue. Knight (1976) suggest that the functional organisations exists as a '*fall-back'* for project members, where they can engage with colleagues in their own specialism, and provide a base to return to when the project is complete. However, the difficulty arises when there exists competing teams or competing organisational structures (Lundin and Soderholm, 1995). This is particularly the case in complex organisational environments consisting of several powerful stakeholders, as defined by Artto *et al.* (2008) in their review of project strategy, discussed in Section 2.7.2.

3.3.4 Transition

The fourth theme within Lundin and Soderholm's (1995) framework concerns the concept of *'transition'*. In their paper, they propose two distinct meanings for the term. The first definition refers to the actual transformation as a result of the task itself, in terms of distinctive organisational change between *'before'* and *'after'* the project. Drawing on the emergent nature of strategy, as discussed by Mintzberg and Waters (1985), Lundin and Söderholm (2013) advise that the *"end-state"* (Lundin and Söderholm, 2013: 590) of the project task is subject to change and adapted over time.

The second meaning of transition refers to the possible (or desirable) perceptions of the transformation or change among the project participants. According to Lundin and Soderholm (1995) this latter meaning of transition is more important to the inner functioning of the project, as it focuses on perceptions of casual relationships, ideas about how to proceed to the final outcome and the conclusion of the project. Focusing on the second meaning of transition, Burstrom and Jacobsson (2012) conducted an empirical study to identify and understand challenges related to *'transition processes'* that occur between temporary and permanent organisations. Drawing on three related projects they found that transition processes are characterised by operational complexities that demand project stakeholders perform multiple translational and transformative activities at the individual, functional, operational and strategic levels of the permanent organisation.

Jacobsson *et al.* (2013) further argue that, from an intra-organisational perspective, it is unlikely that temporary organisations can exist detached from the permanent

organisation. As it is a subset of personnel from the permanent structure that are drawn together to perform a specific task, the temporary organisation is viewed as a form of '*transitory unit'* in the permanent organisation (Jacobsson *et al.*, 2013: 259). However, Artto (2013) perceives the notion that the temporary organisation remains the extended counterpart of a single permanent organisation, as being problematic. Within this context, the temporary organisation emerges as an *'obedient servant'* to the permanent organisation and implements its project strategy to fulfil the mission of the parent (Artto *et al.*, 2008), as discussed in Section 2.7.2. This, in effect, challenges the emergent nature of temporary organisations and the notion that temporary organisations make autonomous decisions to self-manage itself in pursuit of self-originated goals (Artto, 2013). As the permanent organisation continues to determine the actions of the temporary organisation, the boundaries between them become blurred.

3.4 Leadership of temporary organisations

A further theme within Lundin and Soderholm's (1995) team concept is leadership of temporary organisations. Although there has been an extensive body of literature on the topic of leadership within permanent organisations, empirical research investigating leadership styles within the context of temporary organisations remains scarce (Söderlund, 2011; Janowicz-Panjaitan *et al.*, 2009). Turner and Muller's (2005) review also reveal that leadership styles are typically overlooked as a success factor in projects. This is despite the proposition in general management literature that an appropriate leadership style can lead to higher performance. Of the few exceptions, Aga *et al.* (2016) found a positive relationship between project success and leadership styles of project managers in the role of team-building in Ethiopian Non-Government projects. Kangis and Lee-Kelley (2000) also identified a relationship between the perception of difficulty involved in a project and the type of leadership style adopted by project managers in clinical research organisations. Furthermore, Bryman *et al.* (1987b) found that, compared to permanent organisations, leaders of temporary organisations on construction projects, tend to be more participatory in style.

Within the context of the permanent organisation, much of the research on leadership has drawn on the dichotomy between task-focused leadership and person-focused leadership styles, as presented in Fielder's (1967) contingency theory of leadership. Fielder (1967) proposed that the primary concern of task-orientated leaders is to ensure that subordinates perform to a high level. In contrast, person-focused leaders are

primarily concerned with developing good relationships with their subordinates. It is this style of leadership that is, generally, considered to be more effective.

The contemporary view proposes that no single leadership style is suitable for every situation (Kangis and Lee-Kelley, 2000). Effective leadership is widely understood to be contingent on *'the leader, his followers, the organization and the social milieu'* (McGregor, 1966: 76). Drawing on the contingency perspective, Bass an Avolio (1994) present their full range transactional-to-transformational range of leadership styles, summarised in Table 3.1. First introduced by Burns (1978) within his descriptive research on political leaders, transactional leadership refers to the exchange relationship between leader and follower to meet their own self interests. Bass (1990) proposes that this may take the form of contingent rewards in exchange for effort.

> "*…making, and fulfilling, promises of recognition, pay increases, and advancement for employees who perform well. By contrast employees who do not do good work are penalized"* (Bass, 1990: 20).

It may also take the form of *management by exception*, in which the leaders, either, monitors their followers performance and takes corrective action for deviations, or waits until problems arise before taking corrections. In contrast, it may also take the form of *laissez-fair*, in which the leader avoids taking action altogether (Bass, 1999).

TRANSFORMATIONAL LEADER	TRANSACTIONAL LEADER
Charisma: Provides vision and sense of mission, instils pride, gains respect and trust.	**Contingent Reward:** Contracts exchange of rewards of effort, promises rewards for good performance, recognises accomplishment.
Inspiration: Communicates high expectations, uses symbols to focus efforts, expresses important purposes in simple ways.	**Management by Exception (active):** Watches and searches for deviations from rules and standards, takes corrective action.
Intellectual Stimulation: Promotes intelligence, rationality, and careful problem solving.	**Management by Exception (passive):** Intervenes only if standards are not met
Individual Consideration: Gives personal attention, treats each employee individually, coaches, advises.	**Laissez-Faire:** Abdicates responsibilities, avoids making decisions.

Table 3.1: Characteristics of transformational and transactional leaders. *Source*: Adapted from Bass (1990)

Conversely, transformational leadership refers to the leader moving the follower beyond immediate self-interests, energising them and promoting positive change in individuals and groups (Avolio *et al.*, 1991; Bass, 1999). Transformational leadership may be achieved either, through the charisma, or idealised influence of the leader to inspire

followers. It may also be achieved through inspiration by communication of a desirable vision of the future, or realized through intellectually stimulating followers to become more innovative and creative. Finally, it may be attained through individual consideration to the developmental needs and coaching of followers (Bass, 1990; Bass, 1999).

Within the context of the permanent organisation it is transformational leadership, in particular, with its principles of communication of vision, affordance of autonomy via the extension of trust, and the idealised influence of the leader, that has been found to be most effective in terms of fostering value-adding activity such as innovation, or greater engagement amongst followers (Avolio and Bass, 2002). However, despite studies investigating transformational leadership within the management of projects (Aga *et al.*, 2016), this review finds problems in the transactional-transformational perspective when applied to temporary organisations.

The first problem is the association of temporary organisational actors with the permanent organisation. As observed by Tyssen *et al* (2014), the significant challenge for leaders of projects is that they, actually, have little *de facto* authority. As a consequence of the limited duration of the temporary organisation, responsibility is over a defined period. Once the project is complete, actors within the temporary organisation will either return to their functional department or progress to other projects. Significantly, project members are aware from commencement that at some defined point in time, the temporary organisation will cease to exist (Miles, 1964; Keith, 1978). Studies find that it is the line manager within the permanent organisation that has the most influence over project team members, as leaders of temporary organisations have no influence over the transactional exchange of promotions, career prospects or rewards of employees (Kangis and Lee-Kelley, 2000).

Tyssen *et al* (2014) further argue that the short duration of a project also does not allow adequate time for the development of deeper social relations required for transformational leadership interactions to take place. This is significant, as according to Muller and Turner (2007), leaders emotional intelligence affects their perception of success, which can feed through to the project team. In their study of construction projects, Bryman *et al.* (1987a) suggests that the limited period of time in which to complete a task, results in a tendency for leaders being highly task-orientated.

Moreover, as a result of time pressures, members of temporary originations are more likely to focus their attention on task-related interactions over development of social relations (Kelly and Loving, 2004; Saunders and Ahuja, 2006). Nonetheless, these tensions do not negate the importance and utility of transformational leadership. Rather they support the contention that transactional and transformational leadership are not mutually exclusive and, in fact, represent ideal points in the contingency-based leadership paradigm (Burns, 1978; Bass, 1985; Avolio *et al.*, 1991).

3.5 Types of temporary organisations

In seeking to gain a greater understanding of the intricacy in managing temporary organisations, a number of researchers have focused on the variations in the temporary organisational forms and developed typologies to describe the differences. Modig (2007) presents a continuum that ranges from *'stationary'* to *'temporary'* organisations. The defining deference between each end of the continuum is the anticipated lifespan of the organisation. In conducting an empirical study of four cases across different industries, temporary organisations are classified along the continuum according to the forms of employment, work processes and resource network.

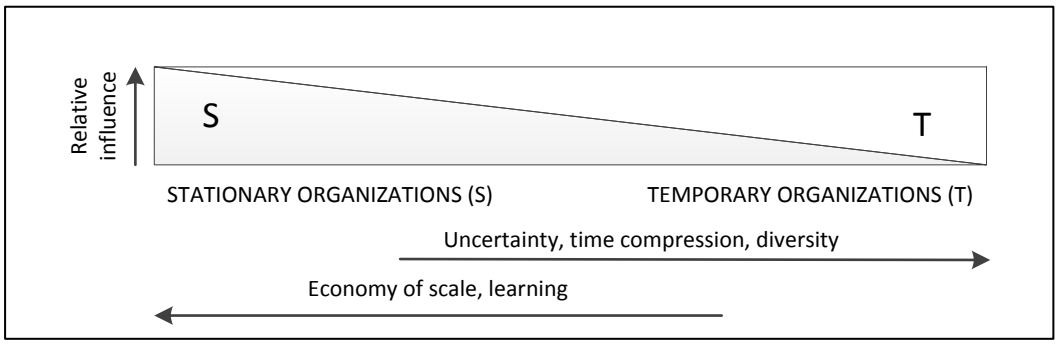

Figure 3.1: Contrasting organizational forms. *Source:* Modig (2007)

As shown in Figure 3.1, the *'pure'* temporary organisations, on far right of the continuum, represents projects that employ members for only the duration of the project, develop work routines internally and are dependant on member's networks to secure access to critical resources. At the other extreme, employees within *'pure'* stationary organisations have long-term employment contracts, pre-defined work processes and organisational wide resource networks. According to Modig (2007), the mid section of the continuum represents project orientated organisations with project offices or project programmes, such as consultancy firms or construction contractors. These type of organisations perform unique, specialist tasks that are normally achieved in well-established organisational structures (Linderoth, 2002).

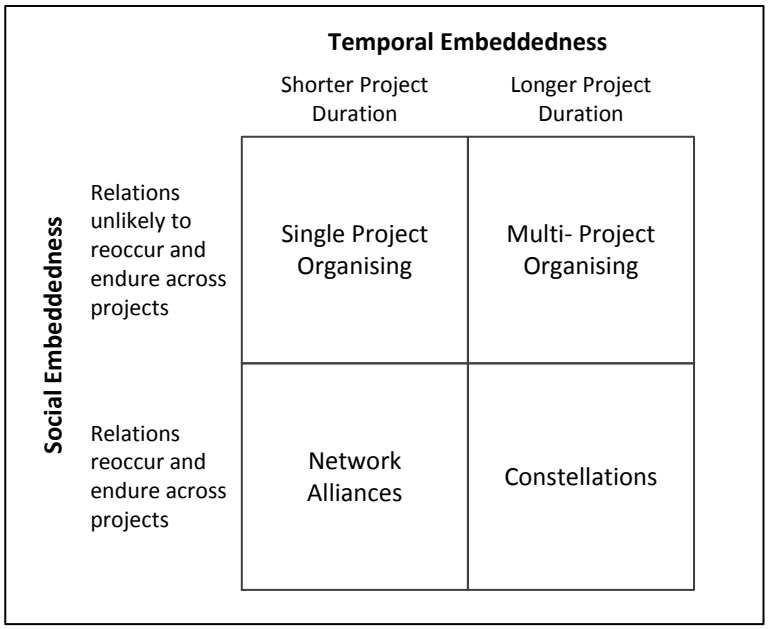

Figure 3.2: Four types of inter-organizational projects. *Source:* Adapted from Jones and Lichtenstein (2008)

Jones and Lichtenstein (2008) also take a multi-firm perspective in their discourse on inter-organisational projects. In considering the two dimensions of *'temporal embeddedness'* and *'social embeddedness'* Jones and Lichtenstein (2008) identify four types of inter-organisational projects, shown in Figure 3.2. Within the framework, *'temporal embeddedness'* refers to the expected duration of a project and associated mechanisms for coordination of collaborative activities between member organisations (Clark, 1985). Drawing on Granovetter's (1992) definition of embeddedness, Jones and Lichtenstein (2008) propose that *'social embeddedness'* comprises of *'rational embeddedness'*, which is the degree to which actors know and consider one another's needs and goals (Granovetter, 1992) and *'structural embeddedness'*, which is defined as *"the impersonal configuration of linkages between or people units"* (Nahapiet and Ghoshal, 1998a: 244). Using these dimensions, Jones and Lichtenstein (2008: 241) classify *'single project organising'* as one-time projects that are relatively short in duration, enacted by organisations that have rarely interacted in the past. In contrast, they suggest that *'network alliances'* and *'constellations'* are enacted by organisations that interact repeatedly. In the case of *constellations*, Jones and Lichtenstein (2008) suggest that this type of project, typically involves a single client.

The concept of structural embeddedness does create difficulties for the notion of swift trust, discussed in Section 3.3.3 (Meyerson *et al.*, 1996; Saunders and Ahuja, 2006). Jones and Lichtenstein (2008) propose that the temporal nature of intra-organisational

projects, actually forces actors to move among collaborative partners. Temporary organisational actors not only have direct relations with other team members, but also are also indirectly linked by third parties who are likely to have further interactions with each other. They therefore assert that trust within this context derives from a shared institutionalised understanding that evolves out of prior interactions between and among organisations. As such, Jones and Lichtenstein (2008) argue that participants in the temporary system who do not know each other are not developing trust swiftly, rather they are operating under established, shared collaborative rules contained within an industry macro-culture that has been facilitated by a process of structural embeddedness.

Jones and Lichtenstein's (2008) framework also creates difficulties in the suggestion that members of temporary organisations do not anticipate future collaboration beyond the life span of the temporary organisation (Bennis, 1965; Goodman and Goodman, 1976; Saunders and Ahuja, 2006). It is noted that in some industries, members have high expectations of interacting with the same people on future projects. This is a common occurrence in the film industry (Bechky, 2006) and the construction industry where temporary organisational forms are structured as *'quasifirms'* by stable, and recurring relations between the main contractor and a small pool of subcontractors (Eccles, 1981). Findings within construction management research actually suggest that when temporary organisational actors have prior working relationships with other actors, project performance is enhanced (Rowlinson, 1988; Shoesmith, 1996). Hence, partnering arrangements have been actively encouraged within the construction industry over, relatively, recent years (Latham, 1994).

Drawing on Soderlund's (2004b) framework for analysis of project research, Artto and Kujala (2008) present a matrix using dimensions of single v multiple projects, and single v multiple to firms, to categorize four distinctive areas of project management research, as shown in Figure 3.3. Within the framework, management of a project addresses the management of a single project, within a single firm. As discussed within Sections 2.7.2 and 3.4.4, the contextual assumption within the literature is that the temporary organisation created to undertake the project is under the governance of a single parent organisation (Shenhar *et al.*, 2007; Turner, 1999; Morris and Jamieson, 2005). As such, the operations of the temporary organization are determined through the hierarchy of the permanent structure.

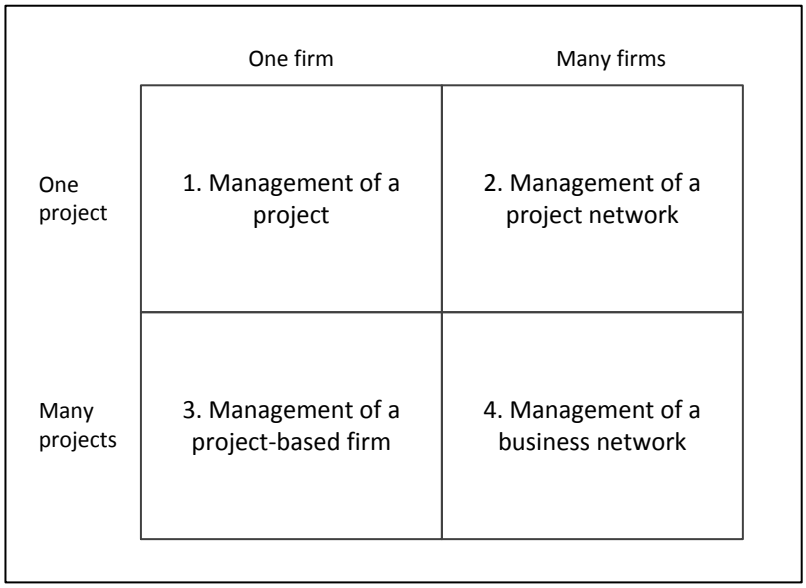

Figure 3.3: Framework of project business: Four distinctive management areas. *Source*: Artto and Kujala (2008)

The second quadrant in Artto and Kujala's (2008) framework is management of a project network. This area addresses the management of a single project across multiple participating firms. Other terms include *'project-based enterprise'* (DeFillippi and Arthur, 1998), *'project coalition'* (Winch, 2008), *'temporary project coalition'* (Pryke, 2004), *'multi-organization enterprise'* (Grun, 2004) and *'temporary multi-organisations'* (Cherns and Bryant, 1984). In contrast to the management of a business network, in quadrant four, management of the project network takes a *"short-term"* perspective" (Hellgren and Stjernberg, 1995: 377). On completion of the project, the network disbands. The defining characteristic of this temporary organisational type is that the complex network of firms and other actors involved in the execution of a single project, have their own objectives, interests and expectations, based on the business objectives of the permanent organisation and the objectives of individual actors (Artto and Kujala, 2008). This view is also shared by Jones and Lichtenstein (2008) who caution intra-organisational projects involve multiple organisational actors with disparate goals, overlapping areas of responsibility and differing level of expertise.

The management of a project-based firm is an area which addresses the managerial issues of a firm that conducts a part of its activities as projects (Hobday, 2000). Whitley (2006) propose two dimensions to differentiate between different types of project-based firms. The first dimension, termed the '*singularity'* of goals, contrasts those project-

based firms producing a single or small number of outputs from those conducting a series of related projects producing similar kinds of outcomes. The notion is that the more singular the output, the more likely the temporary organization will have to deal with exceptions to routines and adjust to variations in the work environment (Perrow, 1967). The second dimension considers the extent to which the tasks and roles are predictable and stable over a number of projects. Drawing on these, Whitley (2006: 84) presents a matrix, shown in Figure 3.4, that defines four types of temporary organisations, ranging from *'organisational'*, where there exists multiple, variable outputs and the skills and roles are changeable, as found in consultancy organisations, to *'hollow'*, where single outputs are produced through standardized, separate roles and skills, and the expertise are fairly predictable, as found in construction projects.

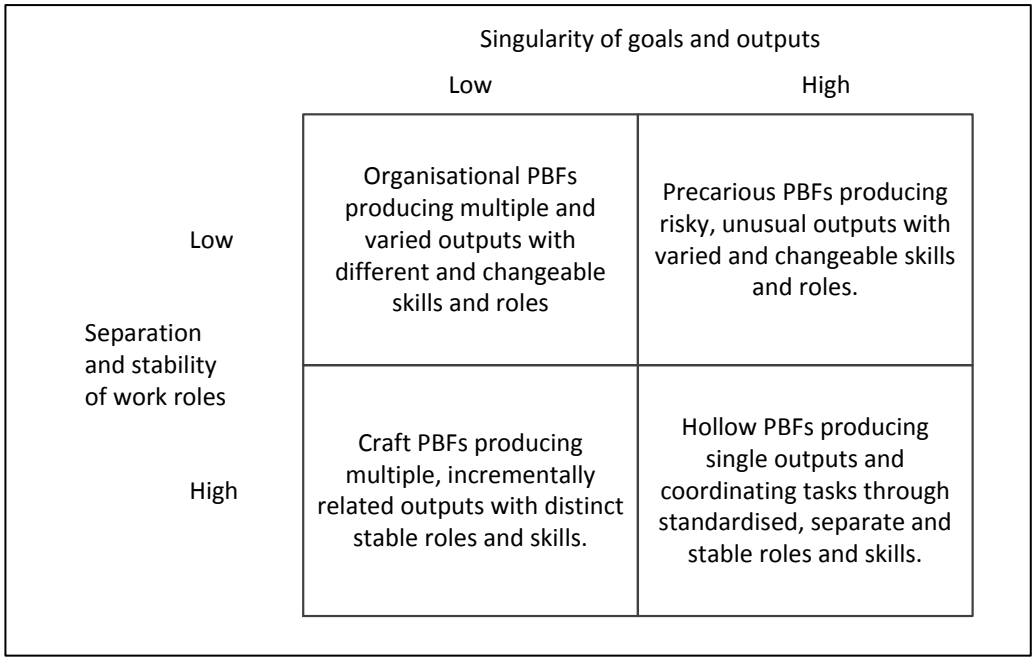

Figure 3.4: Types of Project Based Firms (PBFs). *Source*: (Whitley, 2006)

The fourth quadrant in Artto and Kujala's (2008) framework, shown in Figure 3.3 is the management of a business network, which relates to the activities of several firms that occasionally engage in mutual projects. Firms within the business network create synergies through partnerships, collaborations, alliances and joint ventures (Walker and Johannes, 2003; Davies and Walker, 2008). Artto and Kajala (2008) recognize a rise in the development of business networks, which they attribute to increased outsourcing, de-regulation, new technologies, and the challenge of complexity that has seen distinct capabilities spread across several originations. The salient characteristic of the business network is that, firms may participate in a number of projects, in different roles

(Eloranta *et al.*, 2006). As a consequence, the role of the partnering firm may change from customer, to competitor, to supplier. This results in relations between firms in the business network being contradictory and conflicting (Artto and Kujala, 2008), which has implications for the permanent network and actors within temporary organizations created to implement the varied projects.

3.6 Temporary multi-organisations

Stringer (1967) uses the term *"multi-organisation"* to described the collective allocation of resources to construction projects within the public sector, in which the individuals are, commonly, members of separate organisations. In drawing a comparison with the permanent organisational form, he defines the multi-organisation as:

> *"…the union of parts of several organisations each being part of a subset of interests of its own organisation. It is defined by the performance of a particular task (which may be a continuing one) through the interaction of between individuals"* (Stringer, 1967: 107).

A multi-organisation, therefore, constitutes a "*socio-technical system…a system in which social and interpersonal relationships are partly conditioned by the task – and vice versa"* (Stringer, 1967: 107). Winch (1988) argues that all organisations have a technical system comprising of work processes serviced by the social systems of personal and group interaction. However, in construction these systems operate, both, in a single organisation and across the boundaries of the firm (Shirazi *et al.*, 1996).

Within the context of the construction industry, Stringer (1967) asserts that the task of the multi-organisation requires collaboration from a number of organisations. Each actor will have other interests apart from the construction of the building, and once the building is complete, their collaboration ends. Consequently, the multi-organisation creates a situation where there exist conflicting and competing objectives being pursued through the diverse values that prevail among members. Stringer (1967) concludes that effective communication is, therefore, essential if the multi-organisation is to perform its tasks adequately.

Cherns and Bryant (1984) extend the definition of the multi-organisation form to a temporary multi-organisation. Drawing on Stringer (1967) and Bryant *et al.* (1978), Cherns and Bryant (1984: 181) characterise the concept of a construction project as an

engagement of parts of several, separate and diverse organisations for the limited and defined purpose of bringing a building into being. This includes the client, consultants and contractor. As determined by its temporal nature, once the building is complete, members of the TMO will eventually disperse, returning back to their own organisation, or to a new project (Cherns and Bryant, 1984; Tyssen *et al.*, 2014).

One of the conclusions from Cherns and Bryant's (1984) pilot study into the client's role in construction management was that very little research had been conducted into multi-organisational dynamics. This view was re-emphasised more than ten years later by Shirazi *et al.* (1996) and Murray *et al.* (1999). Cherns and Bryant (1984: 181-83), therefore, present *'twenty, points'*, summarised in Table 3.2, as propositions for future research into the nature of TMOs and guidance for the collection of valid data from client systems, which they acknowledge as being tentative and subject to modification and qualification in light of further evidence. Despite this, Cherns and Bryant (1984) salient points concern the complexity of the client system and the structure of the TMO which, in contrast to permanent organisations, includes multiple organisations and actors.

1. A construction project is an engagement of over different points in time of several organisations – consultants, contractors, subcontractors and suppliers, with a client system that is itself organizationally complex	11. The reasons for early decisions have their origins in the clients' organisational culture, procedures and structures.
2. The management of a construction project from inception to completion is a function of a TMO comprising relevant parts of component organisations.	12. Any attempt to understand the clients' roles in the organization and management of construction projects must consider technical and economical factors, and social and political forces acting within the client organisation.
3. The TMO is a device for handling uncertainty, the structure and mode will change over time as the focus of uncertainty shifts during the course of the project	13. The decision to build is a large scale innovation decision with consequences for existing patterns of resource sharing and risk taking in terms of power conflicts and political behaviour within the client organisation
4. The TMO is an important focus of research because of its potential for minimizing risk, allocating risk and enabling learning to take place across component organisations.	14. Conflicts and behaviours within the client organisation can critically affect the formation, development and performance of the TMO
5. The actual performance of the TMO is determined more by the capabilities of its component organisations and their coordination than by the form of contract.	15. The performance of the TMO can be fully explained and understood only if the client organisation is seen as a complex system with a past, present and future.
6. The complexity of the client system itself and the way complexity is managed has the most critical influence of the formation, development and performance of the TMO.	16. Effective research into the client's involvement in construction management is dependant on gaining access to *valid* data about the client's background, and actions prior to inception and during the course of the project.
7. Most client systems are much more complex organizationally than is commonly acknowledged by their advisers.	17. Gaining access to valid data about the client role in the TMO implies discarding notions of random selection. TMO as a focus of study implies an intense penetration into a few carefully selected client systems.
8. Many architects, and other advisors insist on dealing with a single client representative within whom all internal politics of the client system can be contained.	18. In seeking access to data the researcher has to develop a professional relationship with a potential client within whom the need for access has to be justified and entry negotiated for detailed, sensitive and confidential information about the client system.
9. Many of the problems concerning design changes, delays and difficulties during the construction phase have their origins in the unresolved conflict within the client organisation.	19. Critical access to valid data is feasible only if 1) a basis exists between the researcher and client system that offers something to the client in exchange for access, and 2) access must provide for a deep and continued penetration into the client system.
10. The earliest decisions taken by client system have more influence over the way the TMO is formed and subsequent performance than those taken later.	20. The involvement of the client system and its influence within the TMO is high in the initial phases. Thereafter, involvement tends to be remitted to lower levels of authority within the client system which retreats to reactive mode.

Table 3.2: Points for research into the client role in construction management. Source: Adapted from Cherns and Bryant (1984)

3.6.1 Client complexity with the TMO

In considering the role of the client in construction, Cherns and Bryant (1984) argue that the client in not a unitary concept. Instead they maintain that the progress of a construction project involves various groups within the client organisation whose interests may differ and conflict. For Cherns and Bryant (1984: 181) the client represents a '*complex system*' consisting of both, congruent and competing, influential interest groups. These different influences within the client system are themselves part of the TMO and can critically affect its performance (Cherns and Bryant, 1984).

Newcombe (2003) also propose that the concept of the client as a single entity is obsolete and does not reflect the reality of stakeholder configurations for most projects, where the client is only one stakeholder out of many. In perceiving the project organisation as "*coalitions of powerful individuals or individuals or interest groups which pursue multiple goals*" Newcombe (1996: 76) describes the stakeholder configuration on a construction project to include clients, project managers, designers, sub-contractors, suppliers, funding bodies, users and the general community. In his study of stakeholder power within a major redevelopment of a railway yard, Newcombe (2003) concludes that the project should be managed to the benefit of all stakeholders and this is the responsibility of the project manager as their agent. This principle is also supported by Mazur *et al's* (2014) hypothesis that the mediating mechanisms of internal and external relationships, implemented by the project manager, lead to the success of a project.

Bourne and Walker (2006) also use stakeholder analysis to identify conflicts evolving from power gaps and political groupings among client stakeholders. In bringing together elements of risk management and leadership theory, they suggest that the diverse range of the perceptions of project success can be reconciled through the project manager's attention to the needs and expectations of the multi-stakeholder client body. Bertelsen and Emmitt (2005) attempt to categorise construction project stakeholders by conceptualising the client stakeholder as three distinct client groups, consisting of owners, users and society, each having differing perspectives of the value of the building prior, during and after construction. Whilst, Sidwell (1990) finds that project owners and stakeholders have divergent value systems, which are often incompatible with those of other stakeholders. As a result, the perception of project success becomes diverse.

Thomson (2011) proposes that the pluralistic nature of the multi-stakeholder client body often leads to conflict between client stakeholders. In defining the pluralism of the construction client, Thomson (2011) draws on a definition outside of construction, that *"…organisations are more or less heterogeneous assemblages of actors, interests and inclinations where conflicts of interests are inescapable"* (Alvesson *et al.*, 2009: 253). In his pilot study into the client complexity within an office refurbishment project for a public sector client, Thomson (2011) explores the consequences of ambiguous stakeholder perceptions of project success. His findings support the proposition that client requirements continue to emerge throughout project progression, and that a single project sponsor cannot reconcile the varied perceptions of success held by a multi-stakeholder client body.

Bana e Costa *et al.* (2001) also highlight the consequences of client complexity in their observation of stakeholder conflicts within a case study for a new railway link to the Port of Lisbon. Within their study, they found horizontal conflicts deriving from the different value systems between the public sector departments involved in the project. Similarly, Olander (2007) observed the competing value systems, differentiation, internal complexity, and changing relative importance of clients constituent stakeholders within their stakeholder analyse of three public sector construction projects. Although the notion of the client as a system (Arnaud, 1998) has been demonstrated through these studies, Points 8 of Cherns and Bryant's (1984) framework, in Table 3.1, propose that the internal project stakeholders, forming the TMO, are impatient of client complexity. Instead, there is preference for dealing with a single client representative, within whom all the politics of among the client body is contained.

3.6.2 TMO procurement strategy in the construction sector

In contrast to the structural configurations within the permanent organisation, Lizarralde *et al.* (2011) proposes that the formal structural configuration of the TMO commonly focuses on the analysis of procurement strategies and the contractual relationships that determine the formal governance mechanisms (Turner and Simister, 2001; Walker and Hampson, 2008; Kelly *et al.*, 2002). Within the context of the construction industry, the focus of procurement has seen a shift from low cost to best value for the client (Oyegoke *et al.*, 2009). Client value is emphasised through a number of UK government reports (Latham, 1994) and is inherent in the Office of Government Commerce's (2003) definition of procurement strategy.

> *"…procurement strategy identifies the best way of achieving the objectives of the project and value for money, taking account of the risks and constraints, leading to decisions about the funding mechanism and asset ownership for the project. The aim of a procurement strategy is to achieve the optimum balance of risk, control and funding for a particular project"* (OGC, 2003: 2)

The procurement strategy is delivered through an appropriate procurement route. This includes the contract strategy that is assumed best to meet the needs of the client (OGC, 2003). Although, the Royal Institute of Chartered Surveyors (RICS) offers *"general principles"* for the selection of an appropriate procurement route (RICS, 2013: 11), it is generally accepted that no single approach is suitable for all contingencies (Rowlinson, 1999; Taylor *et al.*, 1999). As such, clients will select a procurement route that has either worked for them in the past or which they know to be suitable, taking into account their prioritised objectives and their attitude to risk (Morledge, 2002).

There are four predominant procurement routes within the UK construction industry: traditional contracting, design and build, construction management and management contracting (Oyegoke *et al.*, 2009; RICS, 2013). Each type determines the complex, structural configuration of the TMO.

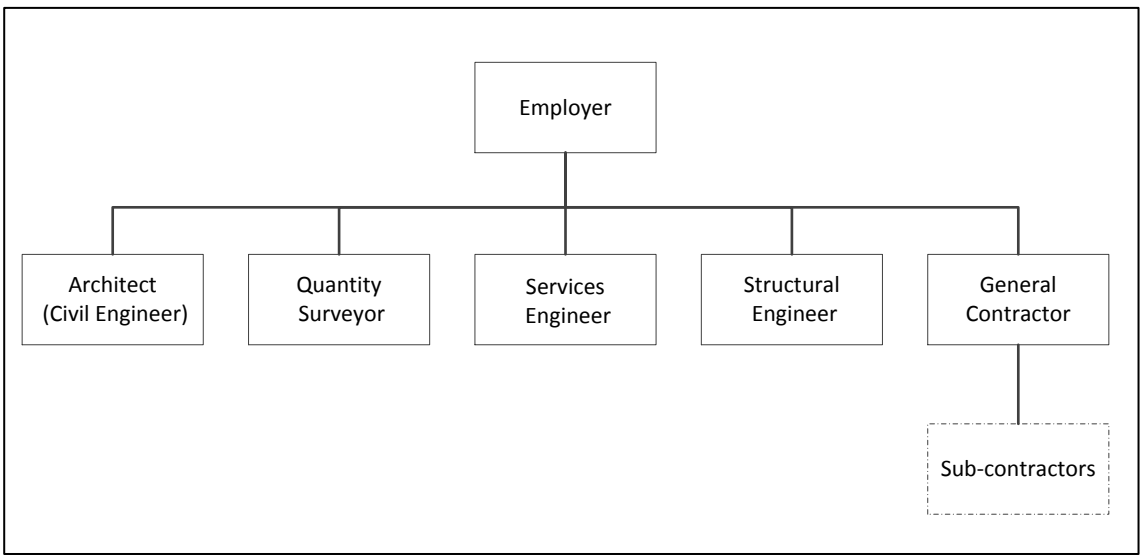

Figure 3.5: TMO configuration in traditional, general contracting. *Source*: Adapted from Murdoch and Hughes (1997)

The traditional approach to procurement, also referred to as general contracting (GC Works), is characterised by the separation of design from the construction process (Murdoch and Hughes, 1997). As illustrated in Figure 3.5, the configuration of the TMO consists of the architect and other design professionals that form the design team

design team and the main contractor. Typically, there is a lack of integration across this boundary (Rowlinson, 1999). It is also common for the contractor to sub-contract the majority of site works through a network of builders and suppliers (Eccles, 1981).

RICS (2013: 12) suggest that this route is suitable for inexperienced or occasional construction clients due to its *"least risk"* approach and the level of certainty about design, cost and duration inherent in the strategy, if properly implemented. Under normal conditions of the traditional procurement route, design is completed before competitive tenders are invited and before the main construction contract is let. Consequently, the client will usually select and appoint the design team prior and before appointment of the main contractor, thus maintaining ownership of the design. Assuming no changes are introduced, cost certainty and project duration can be determined prior to the commencement of the construction phase.

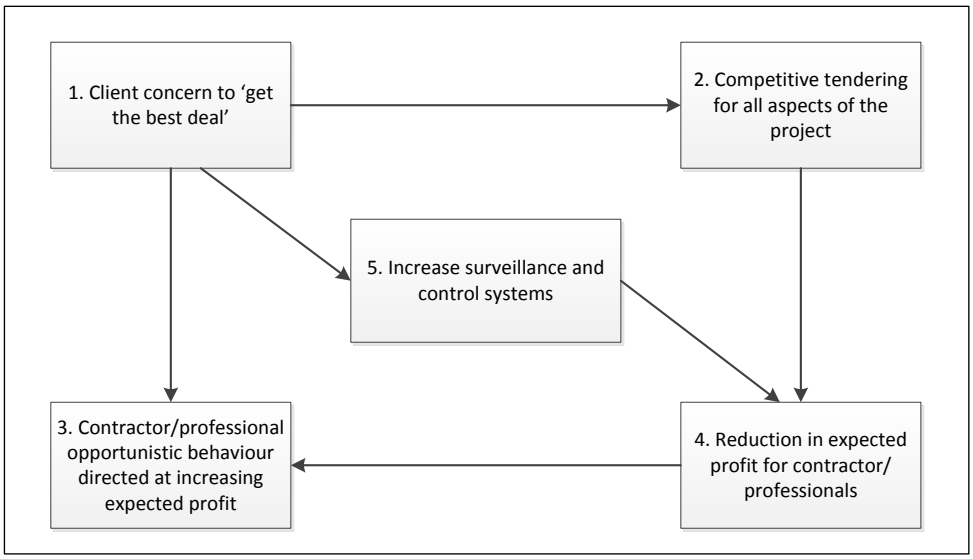

Figure 3.6: The vicious circle of construction procurement. *Source:* (Curtis *et al.*, 1991)

Murdoch and Hughes (1997) warn that problems with the traditional procurement route can occur when work does not concur with the design, or when the design information is incomplete. Indeed, the biggest drawback within the tradional procurement strategy is in the competitive bidding process that forces contractors to submit low, often unrealic, bids and look to alternative means to recoup lost profit, mainly through claims (Ioannou and Leu, 1993). Viewed as the *'vicious circle'* of the construction procurement process (Curtis *et al.*, 1991; Rowlinson, 1999), clients will be seeking to maximize value for money through the contractual agreement, whilst contractors and professionals will be seeking to maximize profit, as illustrated in Figure 3.6.

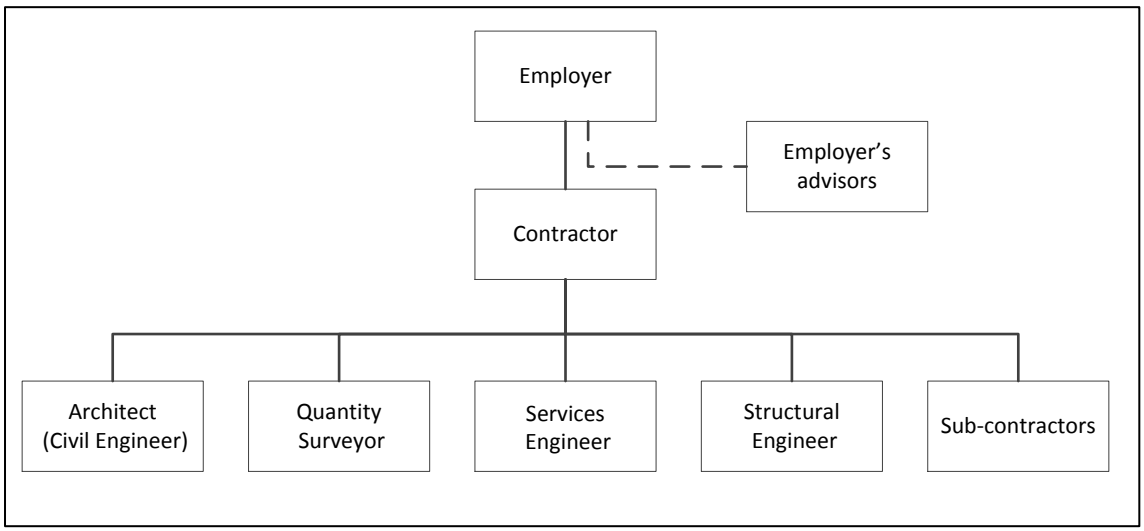

Figure 3.7: TMO configuration in Design and Build. *Source*: Adapted from Murdoch and Hughes (1997)

In contrast to the traditional procurement strategy, the design and build approach, shown in Figure 3.7, is characterised by the single point of responsibility offered to the client by the contractor and the opportunity of overlapping the design and construction phases (Rowlinson, 1999). RICS (2013: 10) advises that in the deign and build procurement route, the contractor assumes the risk and responsibility for designing and building the project. As with traditional approach, there are variations within design and build, as described by Akintoye (1994). But typically, consultants on the project are employed directly by the design and build contractor. The most significant feature of the design and build arrangement is, therefore, the lack of an independent certification role in the contract, instead the contractor is responsible for all elements of the project (Murdoch and Hughes, 1997).

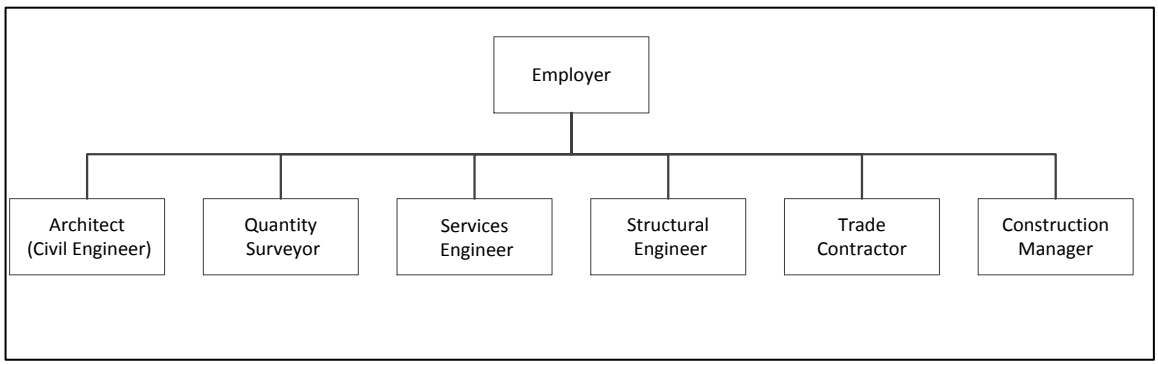

Figure 3.8: TMO configuration in construction management. *Source*: Adapted from Murdoch and Hughes (1997)

Rowlinson (1999) clarifies the difference between construction management and management contracting. The essential distinction is between the organisational forms

is the relationship of the client to the contractors. Under a construction management route, illustrated in Figure 3.8, the client places a direct contract with each of the specialist design professionals and trade contractors. This ensures that the risk and responsibility is not allocated to a single contractor (RICS, 2013). In order to coordinate and facilitate collaboration between TMO members, the client employs the services of a construction manager, who acts as the role of consultant to advise the client (Murdoch and Hughes, 1997).

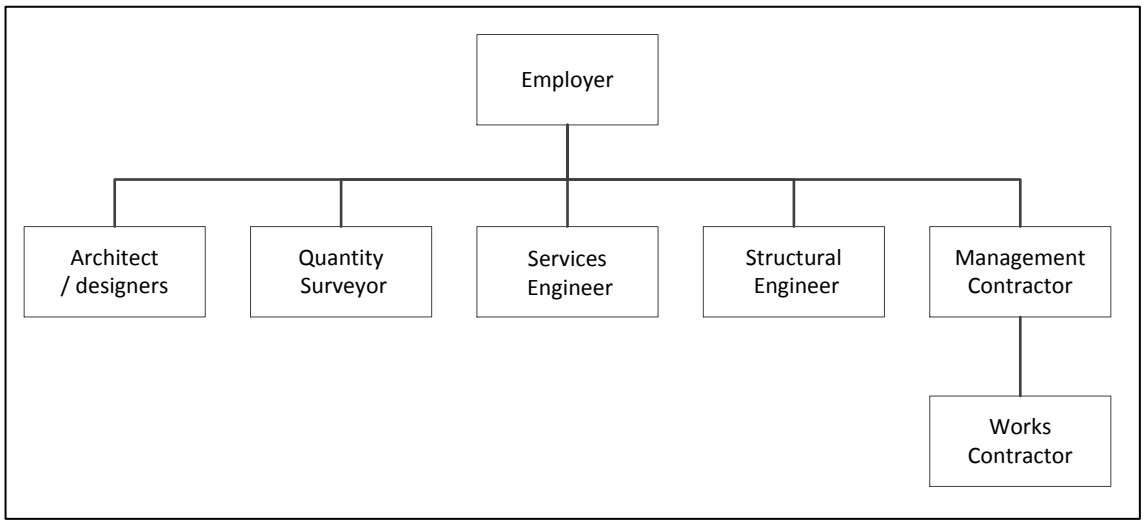

Figure 3.9: TMO configuration in management contracting. *Source*: Adapted from Murdoch and Hughes (1997)

In contrast, management contracting, illustrated in Figure 3.9, allows for the involvement of a management contractor, or consultant, to manage the entire building process (Oyegoke, 2001). In this route the client engages a management contractor to participate in the project at the early stage, in order to contribute construction expertise to the design and manage the construction operations on site (Murdoch and Hughes, 1997). Rowlinson (1999) explains that, in contrast to construction management, trades contractors have a direct contract with the management contractor, who also acts as client's representative and has authority to make decisions affecting the designers and contractors.

Although each procurement route is an idealisation of a complex temporary organisation (Rowlinson, 1999), Lizarralde *et al.* (2011) argue that procurement strategies oversimplify the relationship between actors in the TMO, through four key points. First, it is suggested that informal communication links between organisations and individuals does not necessarily correspond to the formal contractual links in the procurement strategy (Gluch and Raisanen, 2009). Second, TMOs are not static. They

evolve to adapt to the dynamic conditions of the project and its environment. This concurs with Point 1 of Cherns and Bryant's (1984) framework, in that engagement of organisations within the TMO are over different points in time. For this reason the structural configuration constantly changes as different actors join and leave the TMO (Murdoch and Hughes, 1997). Third, Lizarralde *et al.* (2011) find that legally bound contracts consider and represent the client as a single heterogeneous entity. This assumption underestimates the complexity of the project client, which includes various, diverse organisations with a complex internal structure, with heterogeneous interests, methods of work and expectations of the project, as advised in Lizarraldle *et al's* (2011) fourth point.

3.7 Project governance

As discussed in Section 3.6.2, the structure of a TMO involves a complex arrangement of multiple clients and stakeholders. Indeed, general procurement strategies anticipate that the client establishes contracts with one or more organisations (Lizarralde *et al.*, 2011). Successful delivery of the project, therefore, involves several independent economic transactions, under conditions of uncertainty and conflicting objectives (Ahola *et al.*, 2014). This complexity is addressed through the governance of a project, which according to Ahola *et al.* (2014) originates from two streams of literature. Firstly, transaction action cost economics that represents a contractual approach to economic transactions in which efficiency of the transaction is the main objective (Williamson, 1975; 1985). Secondly, the corporate governance literature that focuses on agency theory and the exchange relationship between the agent and the principle (Eisenhardt, 1989a; Jensen and Meckling, 1976).

In conducting citation analysis of studies into project governance, Ahola *et al* (2014) identify two distinct perspectives within the project management literature. The first stream views project governance as a process external to any specific project. According to this perspective, individual projects are subjected to governance by their owner organisation (APM, 2004; PMI, 2013). Drawing on the definition for corporate governance presented by the Organisation for Economic Co-operation and Development (OECD), which proposes that *"corporate governance involves a set of relationships between a company's management, its board, its shareholders and other stakeholders"* (OECD, 2004: 11), the Association of Project Management (APM) present the following definition for project governance:

> *"The governance of project management concerns those areas of corporate governance that are specifically related to project activities. Effective governance of project management ensures that an organisation's project portfolio is aligned to the organisation's objectives, is delivered efficiently and is sustainable. Governance of project management also supports the means by which the board, and other major project stakeholders, are provided with timely, relevant and reliable information"* (APM, 2004: 4)

The focus of governance within this perspective is on maintaining the alignment of various project objectives with the strategic objectives of a single organisation (Müller, 2009). This includes alignment of governance at the different project related levels of project, programme and portfolio management (Bekker and Steyn, 2009), as illustrated in Figure 2.5.

The second literature stream evolving from Ahola *et al's* (2014) analysis, treats project governance as a process internal to any specific project. According to this view, the primary purpose of project governance is to ensure that the project meets the goals and expectations subjected to it by the varied stakeholders within the temporary organisation (Turner, 2006). This perspective aligns with Artto *et al's* (2008) proposition that the project is positioned in a complex organisational environment of several powerful stakeholders, rather one strong parent organisation, as discussed in Section 2.7.2. Turner and Simister (2001) argue that the purpose of project governance, therefore, is to create a cooperative project organisation, in which all participants are motivated to achieve common objectives and align individual goals. In their investigation of Public Private Partnerships (PPP) in Indonesia, Abednego and Ogunlana (2006) emphasised the importance of risk allocation in the governance mechanism. Whereas, Ruuska *et al.* (2011: 650) present the following key elements of governance to be considered among projects involving multiple stakeholder organisations:

- Contracts between involved actors
- How procurement is organised and carried out
- How network of suppliers are managed by project actors
- How risks are managed and shared by project actors
- How work is monitored and coordinated during the project lifecycle
- How the project actors collaborate and develop practices, and
- How communication between project actors is organised.

Bekker (2014) attempts to categorise project governance schools of thought further, by drawing a distinction between multi-firm project governance and large capital project governance. He proposes that multi-firm governance concentrates on the contractual relationships among firms participating in a single, or multiple projects. The focus of the governance process is, therefore, on employment relations and supply-chain dynamics (Winch, 2001). Other authors have investigated governance mechanism for knowledge transfer between multiple organisations (Pemsel and Müller, 2012). In the case of the Dutch construction industry, Bosch-Sijtsema and Postma (2010) find that trust, as well as, formal contracts serves as the governance mechanism among participating firms in a single project. Furthermore, in examining relationships in the *'temporary project coalition'* through the application of social network analysis, Pryke (2004) proposes that governance involves a multi-layer of independent networks, which includes contractual relationships, performance incentives and information exchanges among participating firms.

As a result of the intrinsic complexity of large capital projects, Bekker (2014) proposes that the emphasis of governance is on creating an environment, in which the activities can be efficiently managed, shielded from the external environmental, political and strategic influences. This sees a shift in focus from contractual relationships and control, as discussed in Section 3.7.2, to the development of an appropriate governance framework in which project decisions can be made. Whereas the terms *'governance'* and *'governing'* both refer to the power relations between stakeholders and the conditions that frame them (Lizarralde *et al.*, 2013), Sanderson (2012) highlights the distinction, by clarifying that governance considers the *"form of organisation designed ex ante"* whilst, governing considers the *"mirco-processes of organizing emerging ex post"* (Sanderson, 2012: 433). However, following the lessons learned from a study of project governance within the construction of two major nuclear power plants, Ruuska *et al.* (2011) propose that governance mechanisms, actually, evolve during the construction phase of the project through a process of self-regulation.

Bekker (2014) makes the argument that the performance of large projects is affected by complex institutional environments, and by the underlying business network of organisations (Artto and Kujala, 2008). Ruuska *et al* (2011) also emphasises stakeholder complexity by arguing that large projects face challenges of governing a project's internal complex supply chain of multiple firms, and of simultaneously

governing the network of external stakeholders. Despite the focus of research being on large capital projects (Bekker and Steyn, 2009; Ruuska *et al.*, 2011; Abednego and Ogunlana, 2006), the complex integration of various internal and external stakeholders and the complexity of the composition of different contracting companies from different organisations working across organisational boundaries, also applies to TMOs, as defined by Cherns and Bryant (1984). As observed by Bekker (2014), the difference between approaches to governance, appear to be driven more by stakeholder complexity, rather than complexity of the project.

3.8 Research gaps and research questions

The review of the literature, conducted in Chapters 2 and 3, finds that the majority of research enquiring into the strategic alignment of projects, and project success, has predominantly focused on temporary organisations within the intra-organisational context. As demonstrated in Chapter 2, current models of strategic alignment focus on the realisation of corporate level strategic objectives through the implementation of projects contained within the boundaries of a single organisation. Within this arrangement the dominant discourse makes the assumption that the temporary organisation created to implement the project will arrange its operations and perform activities under the directives of a principal, permanent organisation.

Also, as discussed in Section 3.3, much of the discourse contributing to the theory of temporary organisations makes the assumption that many of the propositions underpinning Lundin and Soderholm's (1995) basic concepts, apply to all temporary organisational types. However, as discussed in Sections 3.5 and 3.6, there are fundamental differences between temporary intra and inter-organisations that have significant implications in the pursuit of strategic alignment and project success. The literature review finds that, in comparison to intra-organisational studies, research considering the inter-organisational context of temporary organisations is currently limited, particularly in the field of construction where the dominant body of literature focuses on formal procurement strategies and the contractual relationships between the client and organisations forming the TMO.

The literature suggests that the inter-organisational nature of the TMO results in the creation of an environment where multiple organisations seek to pursue disparate strategic objectives. Whereas, models have been developed to illustrate alignment

within the context of a single organisation (Archibald, 1988; Kerzner, 2004; Morris and Jamieson, 2005), there are no accepted models explaining how strategies are aligned within the context of a TMO. The review also finds a lack of empirical studies investigating strategic alignment within a project environment. As stated in Chapter 1, the first objective of this study is to explore how multiple organisations within a TMO align varied strategic objectives through a single project. In order to investigate the nature of alignment, the varied strategies being pursued by multiple organisations participating in a TMO need to be established. Hence, the first research question of this thesis is as follows:

> **Research Question 1:** *What are the varied organisational strategies being pursued within a temporary multi-organisation?*

A second research gap concerns the dynamic environment in which the TMO is operating. The literature suggests that participating organisations will pursue disparate strategic objectives through a TMO (Jones and Lichtenstein, 2008) resulting in negative behaviours between parties (Curtis *et al.*, 1991). Despite this, project management literature does not appear to consider emergent strategies throughout the project. Instead, procurement strategies are formed at the start of the project and make the assumption that all external factors and contingencies have been identified and considered prior to the formation of the TMO. Yet, as discussed in section 3.7, governance processes are implemented in order to ensure the clients strategic objectives are maintained through the process. Therefore, in considering client complexity, the complexity of the TMO environment, and external influences, the following research questions are asked:

> **Research Question 2:** *What mechanisms are implemented to maintain the alignment of a construction project with the client strategic objectives?*
>
> and
>
> **Research Question 3:** *How effective are these mechanisms in maintaining the strategic alignment of a construction project?*

The third research gap considers the behaviour of TMO actors in pursuit of the, possible, disparate strategic objectives. The literature on project strategy (Artto *et al.*, 2008) and Lundin and Solderhom's (1995) theory of temporary organisations contribute to the understanding of the difficulties in pursuing strategic objectives through projects, but there is currently a lack empirical research to sufficiently explain the strategic

behaviours that evolve when temporary organisation consists of members from multiple organisations. Furthermore, the literature offers no guidance as to how project strategy is developed within this context (Artto *et al.*, 2008). Whereas, the client seeks to maintain alignment of strategic objectives through formal contracts, there is a gap in the literature to explain how representative actors of TMO member organisations seek to balance the pursuit of strategic objectives throughout a construction project. The fourth research question of this study therefore asks:

> **Research Question 4:** *How do varied TMO actors pursue strategic objectives within a single construction project?*

Finally, the literature review finds a gap in the research into project success criteria. This is despite the plethora of discourse on the concept of project success, as discussed in Section 2.6. Literature proposes that the varied stakeholders involved in a project will have different opinions on what constitutes success, and will therefore, make assessment on varied success criteria (Davis, 2014). However, if the complexity of measuring success within the boundaries of a single organisation is accepted (Shenhar *et al.*, 2001), this complexity must be significantly magnified when considering the multiple organisational boundaries that overlap in a TMO. This is further compounded when considering the varied levels of each organisation's strategic hierarchy (Hofer and Schendel, 1978), and client complexity within a construction project (Cherns and Bryant, 1984). The review of the literature also finds a lack of empirical studies identifying the success criteria of varied stakeholders with the TMO, or an explanation as to how the varied success criteria links to the multiple strategic objectives. To address these gaps, the fifth research question of this study asks:

> **Research Question 5:** *How do the varied actors engaged within a TMO measure the success of a construction project?*

3.9 Conceptual Model

In order to answer the research questions presented in Section 3.8, a conceptual model is developed from the initial themes evolving from the literature review. The conceptual model guides the development of data collection instruments, designed to achieve the aims and objectives of the study, stated in Section 1.5. A detailed descripting of the research design is addressed in the following chapter.

The conceptual model illustrated in Figure 3.10 integrates the theoretical concepts of strategic alignment, discussed in Chapter 2, with concepts of temporary multi-organisations explored in Chapter 3. It was established from the strategic hierarchy of objectives, discussed in Section 2.4, that strategy occurs at different levels within an organisation. As such, the client should not be considered as a unitary concept, instead the client comprises of various stakeholder groups. It is this client complexity, discussed in Section 3.7.1 that determines the varied project success criteria of the stakeholder groups.

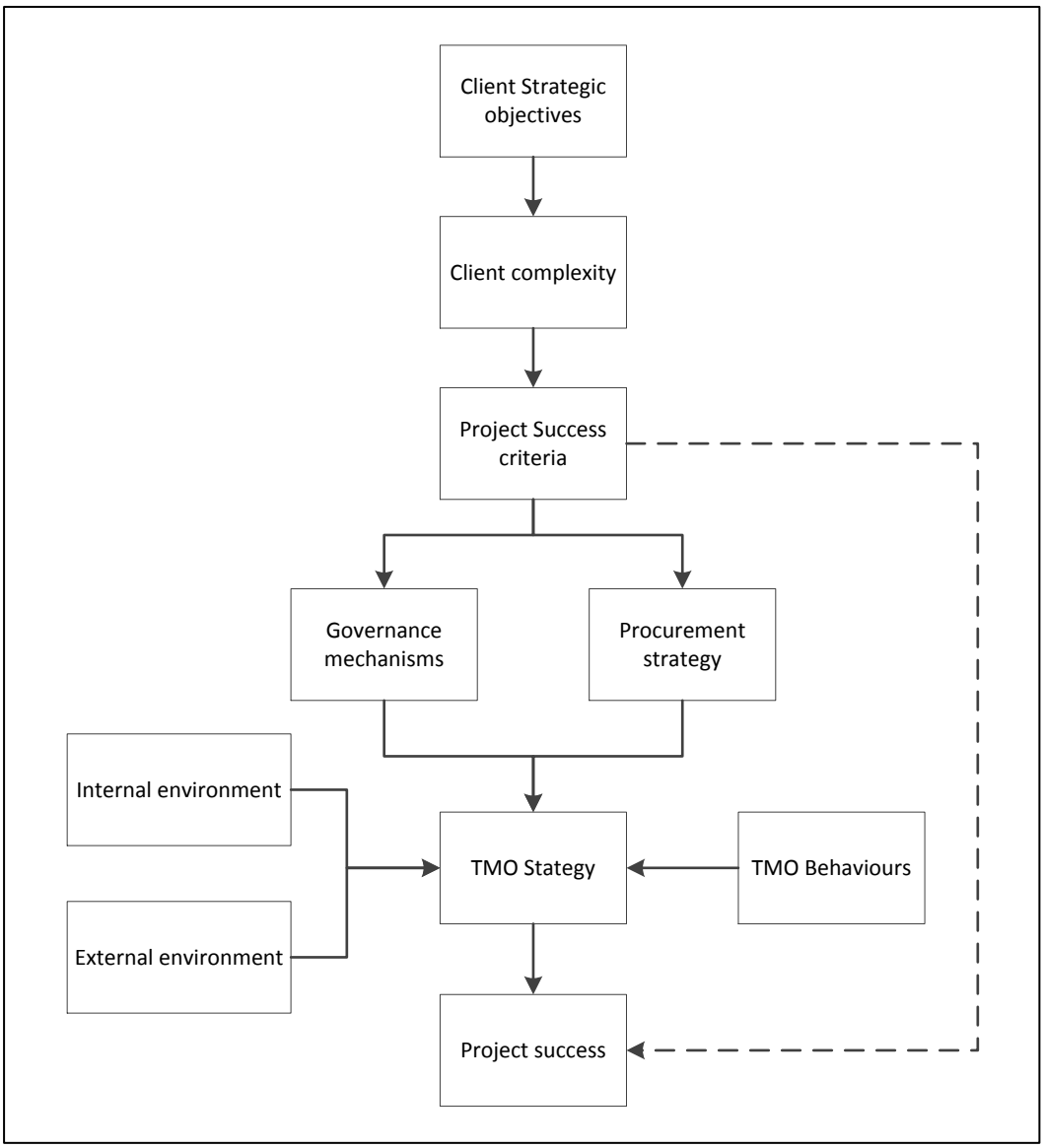

Figure 3.10: Conceptual model of strategic alignment of TMOs

The conceptual model proposes that the strategy of the TMO, developed to pursue strategic objectives and realise client project success criteria, will be influenced by a number of factors. These include the formal procurement strategy that determines the

structural configuration of the TMO, as discussed in Section 3.7.2, and the informal governance arrangements, implemented to maintain alignment of the client's strategic objectives, that emerge throughout the life span of the TMO, as discussed in Section 3.8. The strategy of the TMO will also be a subject to internal and external environmental influences, which may impact on the decisions and actions the TMO takes in pursuit of strategic objectives. Within the literature review, internal influences include the leadership of the TMO, as discussed in Section 3.5, and the client structure, as discussed in Section 3.7.1. Finally, drawing on Lundin and Soderholm's (1995) framework, as discussed in Section 3.5, the model proposes that the behaviour of TMO actors, and hence the TMO strategy, will be influenced by the time, task, team and transition factors, specific to the construction project. On completion, the success of the construction project will be assessed against the client success criteria.

The aim of this research is to investigate how varied organisations in a temporary multi-organisation seek to align multiple strategic objectives through a single construction project, and realise project success. As stated in Section 1.5, this will be explained through a theoretical a model of strategic alignment within the context of a TMO. The conceptual model in Figure 3.10 forms the foundation of the final theoretical model, which is developed from the empirical investigation of this thesis, and presented in Chapter 6. The conceptual model, developed from the literature, does not take into consideration the individual objectives of each TMO member organisation, or how varied actors within the TMO measure success. These constructs are investigated within the study and included in the final model, presented in Figure 6.5.

3.10 Conclusion to chapter

This chapter concludes the theoretical underpinning of the study. Chapter 2 examined the differing perspectives of strategic alignment, project success and project strategy, whereas this chapter introduced the concept of temporary organisations, characterising the difference and complexity of temporary multi-organisations. Through the integration of these theoretical areas, limitations in the extant literature have been identified. The research questions of the study and conceptual model presented in Figure 3.10 have been developed in response to the limitations. Drawing on the theoretical foundations and the themes evolving from the literature review, the following chapter defines the method used to address the research questions and achieve the research aims and objectives of the thesis.

CHAPTER 4
RESEARCH METHODOLOGY

4.1 Introduction to chapter

The previous chapters provided a review of the underpinning theory informing the research in this thesis. This chapter describes the rationale for the research method pursued within this study. The chapter begins with a discussion of the philosophical assumptions taken in the thesis, which in turn, influenced the methodological choice. The following section of the chapter provides justification for the case study research approach and presents a detailed description of the research design guiding the data collection and analysis. The methods of data collection utilised within the research are then discussed, before explaining the instruments used to analyse the collected data from which conclusions are drawn from the findings. Finally, the principle of ethical research relevant to the study are considered and discussed.

4.2 Research philosophy

Whereas, philosophy is concerned to know what kind of things exist in the world and our warrant to know them, social research is concerned with their knowable properties (Williams and May, 1996). Research philosophy, therefore, considers the nature and development of knowledge and the search for truth (Menacere, 2016; Saunders *et al.*, 2009). However, as proposed by Williams and May (1996), the nature of *'truth'* is only partially explained through scientific investigation, in social research, the nature of truth also involves abstract reasoning of the researcher.

Central to Burrell and Morgan's (1979) thesis is the notion that *"all theories of organisation are based upon a philosophy of science and theory of society"* (Burrell and Morgan, 1979: 1). Burrell and Morgan (1979) present an argument that all social scientists approach their subject via explicit or implicit assumptions about the nature of the social world and the way it may be investigated. The first assumption concerns the ontological nature of the phenomena under investigation, and raises the question of whether reality is constructed externally from individual consciousness, or the product of individual consciousness. The second assumption is of an epistemological nature and is concerned with how knowledge can be obtained and how can the truth be discovered. The third set of assumptions concern human nature and, in particular, the relationship between human beings and their environment. This assumption seeks to establish if

humans are responding in a deterministic fashion to situations encountered in their world, or if human beings are more creative and act on 'free will' and voluntarism. Burrell and Morgan (1979) emphasise that all social science must be predicted upon assumptions of human nature, as it is humans who are essentially the subject and object of enquiry.

Burrell and Morgan (1979) propose that the three sets of assumptions have direct implications on the methodological nature of enquiry. Each assumption has important consequences for the way in which social scientist attempts to investigate and obtain knowledge about the social world. As such, different ontologies, epistemologies and assumptions about human nature are likely to influence social scientists towards different methodologies. Guba and Lincoln (1998) further propose that the basic beliefs of any paradigm can be summarized by the responses to the ontological, epistemological and methodological assumptions.

The subjective approach to social science		**Assumption**		**The objectivist approach to social science**
Nominalism	←	Ontology	→	Realism
Anti-positivism	←	Epistemology	→	Positivism
Voluntarism	←	Human Nature	→	Determinism
Ideographic	←	Methodology	→	Nomothetic

Figure 4.1: The subjective – objective dimensions: *Source:* Burrell and Morgan (1979)

The model in 4.1 summarizes the ontological, epistemological and assumptions about human nature, that influence the choice of methodology. As shown, each assumption sits within a continuum between the two polarized philosophical dimensions of *'objectivism'* and *'subjectivism'*. In the model, the objectivist dimension views the social world from a hard, external reality, where the scientific endeavor focuses on the analysis of relationships and regularities between the various elements, which it comprises. The concern within this dimension is the definition of these elements and the discovery of ways in which the relationships can be expressed. In contrast, the subjective dimension stresses the importance of the experience of individuals in the creation of the social world. As such, the search for understanding focuses upon different issues and approaches them in different ways. Consequently, the principal concern within the subjectivist perspective is the comprehension in the way in which the individual creates, modifies and interprets their social world.

	The subjective approach to social science					**The objectivist approach to social science**
Core ontological assumptions	Reality as a projection of human imagination	Reality as a social construction	Reality as a realm of symbolic discourse	Reality as a contextual field of information	Reality as a concrete process	Reality as a concrete structure
Basic Epistemological Stance	To obtain phenomenological insight, revelation	To understand how social reality is created	To understand patterns of symbolic discourse	To map contexts	To study systems, process, change	To construct a positivist science
Assumptions About Human Nature	Man as pure spirit, conscious being	Man as a social constructor the symbol creator	Man as an action the symbol user	Man as an information processor	Man as an adaptor	Man as a responder
	Exploration of pure subjectivity	Hermeneutics	Symbolic analysis	Contextual analysis of Gestalten	Historical analysis	Lab experiments surveys

Table 4.1: Network of Basic Assumptions Characterizing The Subjective - Objective Debate within Social Science. *Source:* Morgan and Smircich (1980)

Although, objectivism and subjectivism are illustrated as extremes within Burrell and Morgan's (1979), in reality there are a number of positions that exist somewhere between these limits (Holden and Lynch, 2004). Based on the core assumptions of the nature of science, Morgan and Smircich (1980) identify several taxonomies that lie between the six extreme philosophical perspectives debated by Burrell and Morgan (1979). Table 4.1 shows how a researcher's core ontological assumptions influences the epistemological position and position taken on human nature. Each of these assumptions is further explored in shaping the methodological choice of this thesis.

4.2.1 Ontological assumption

The first level of debate towards a research methodology is the ontological assumption. This is concerned with the nature of reality. As illustrated in Figure 4.1, Burrell and Morgan (1979) present a dichotomy between the two extremes of nominalism and realism. The nominalist position evolves around the assumption that the social world, external to individual cognition, consists of nothing more than names, concepts and labels, which are used to structure reality. In contrast, the realist assumption postulates that the social world, external to individual cognition, consists of pre-existing hard, tangible and relatively immutable structures.

Bryman and Bell (2007) also draw a distinction between the two dimensions of *'objectivism'* and *'constructivism'*. Within this dichotomy *'objectivism'* is defined as the ontological position that asserts *"social phenomena and their meanings have an existence that is independent of social actors"* (Bryman and Bell, 2007: 22). At the other extreme of their continuum, *'constructivism'* is defined as the ontological position *"…which asserts social phenomena and meaning are continually being accomplished by social actors* (Bryman and Bell, 2007: 23).

In considering the ontological debate, this thesis holds with the subjective assumption that external realities and the social world exist as subjective constructions of the mind, and drawing on Bryman and Bell's (2007: 23) definition, are not only produced through social interaction, but that they are in a constant state of revision.

4.2.2 Epistemological assumption

The second level of debate towards a research methodology is the epistemological assumption. This is concerned with the science of the nature of knowledge and what is regarded as acceptable knowledge in the field of study. Whereas, Burrell and Morgan's (1979) continuum is polarized between *'positivism'* and *'anti-positivism'*, other researchers have focused their discussion on '*interpretivism'* to denote an alternative to the positive position (Saunders *et al.*, 2009; Bryman and Bell, 2007; Collis and Hussey, 2009).

At the epistemological level, the positivist paradigm seeks to explain the social world by searching for regularities and causal relationships between constituent elements. As explained by Burrell and Morgan (1979), positive epistemology is, in essence, based upon the traditional approaches that dominate the natural sciences. At the epistemological level, the positivist position takes the view that knowledge is external, objective, observable, measurable and independent of social actors (Saunders *et al.*, 2009; Collis and Hussey, 2009). In defining the philosophical perspective further Remenyi *et al.* (1998) states that:

> *" being a positivist, or perhaps a logical positivist, implies that the researcher is working with an observable social reality and that the end product of such research can be the derivation of laws or law-like generalizations similar to those produced by the physical and natural sciences"* (Remenyi *et al.*, 1998: 32).

Within positivism the researcher is an objective analyst of a tangible social reality. As Remenyi *et al.* (1998) further explains *"underlying positivism is the assumption that the researcher is independent of and neither affects nor is affected by the subject of the research"* (Remenyi *et al.*, 1998: 33). The positive position, therefore, advocates the application of the methods of natural sciences to the study of social reality, which includes the formulation of a hypothesis that can be tested and, thereby, allow the explanation of laws of science to be assessed (Bryman and Bell, 2007).

An alterative inquiry is presented by Guba and Lincoln (1998) who analyze four competing paradigms of *'positivism'*, *'postpositivism'*, *'critical theory'* and *'constructionism'*. Within their framework, Guba and Lincoln (1998) suggest that the postpostivist paradigm has evolved as a response to the limitations and criticism of positivism. According to Guba and Lincoln (1998), postpositivsm takes the position of critical realism, where *"reality is assumed to exist but to be only imperfectly apprehendable because of basically human intellectual mechanisms and the fundamentally untraceable nature of phenomena"* (Guba and Lincoln, 1998: 205). In other words, *"perception is not reality as critical realist might aver: instead a perception for realists is a window on to reality through which a picture of reality can be triangulated with other perceptions"* (Perry *et al.*, 1999: 18).

In contrast to the positive position, anti-positivist rejects the notion that science can generate objective knowledge (Burrell and Morgan, 1979). The anti-positivism position advocates that social reality and the world are relative, and can only be understood from the viewpoint of the individuals directly involved within the activities being studied. The anti-positivist researcher, therefore, rejects the standpoint of the observer. Instead, arguing that inferences about a social reality cannot be made without an internal perspective of the social reality (Burrell and Morgan, 1979).

Within the traditions of anti-posivitism, interpretivism views the investigator and the object of investigation as being intrinsically linked (Guba and Lincoln, 1998). Consequently there is a need to minimise the distance between the investigator and the investigated object (Collis and Hussey, 2009). In drawing a distinction with functionalism, that advocates a research process in which the researcher is independent of the subject matter, Burrell and Morgan (1979) advise that the interpretive paradigm advocates a research process where the social world is best understood from within. It

seeks explanation within the reality of individual consciousness and subjectivity, from perspective of the research participant. In its approach to social science interpretivsm tends to be nominalist, anti-positivist, voluntarist and ideographic. The concern, therefore, within the interpretive paradigm is to understand the fundamental nature of the social world at the level of subjective experience.

Symon and Cassell (2012) advise that interpretivism covers a variety of philosophical approaches. These include the German intellectual tradition of hermeneutics (Taylor, 1971) and the Verstehen tradition in German sociology (Weber, 1947). Prasad (2005) further describes how interpretive traditions emerge from the position that takes human interpretation as the starting point for developing knowledge about the social world. Consequently, within the intrepretivist epistemology there is a necessity for the researcher to understand differences between humans in their role as social actors (Saunders *et al.*, 2009).

As informed by Crotty (1998), intrepretivist traditions include phenomenology and symbolic interaction. Within these perspectives, phenomenology is defined as:

> *"a theoretical point of view that advocates the study of direct experience taken at face value: and one which sees behavior as determined by the phenomena of experience, rather than by external, objective and physically described reality"* (Cohen *et al.*, 2007: 22).

In contrast to the positivist researcher, the phenomenologist does not consider the world to consist of an objective reality, but instead considers subjective consciousness as prevailing. As such, each situation is considered to be unique and its meaning being a function of the circumstances and the individuals involved (Remenyi *et al.*, 1998). Therefore, phenomenologist researchers do not consider themselves independent of what is being researched, but is an intrinsic part of it.

Symbolic interactionism makes the argument that interaction takes place in such a way that the individual is continually interpreting the symbolic meaning of their environment and acts on the basis of the implicated meaning (Bryman and Bell, 2007). Blumer (1962) refers to this position as *"the peculiar and distinctive character of interactions as it takes place between human beings"* (Blumer, 1962: 79). According to Denzin (1978) symbolic interaction rests on three basic assumptions. Firstly, social reality as it is sensed, known and understood is a social production, and interacting individuals produce and define their own definitions of situations. Second, humans are

assumed to be capable of engaging and 'minded' in self-reflective behavior, in that, they are capable of shaping and guiding their own behavior and that of others. Third, in the course of shaping and guiding their own behavioral standpoint and fitting that standpoint to the behavior of others, humans interact with one another. Interaction is, therefore, symbolic because it involves the manipulation of symbols, words, meanings, and languages.

In considering the ontological and epistemological arguments presented in this chapter, this study holds with the interpretivist paradigm. The epistemological stance of the research sits between obtaining phenomenological insight and seeking to understand patterns of symbolic discourse, as illustrated within Morgan and Smircich's (1980) guiding framework, illustrated in Table 4.1. The research objectives discussed in Chapter 1 and the research questions developed in Chapters 2 and 3 seek to gain a greater understanding of the strategic interactions within temporary multi-organizations. Therefore, in following the ontological position that reality is socially constructed, the epistemological position of this study seeks to understand how social reality is created.

4.2.3 Assumptions about human nature

Within Burrell and Morgan's (1979) framework, the third set of assumptions that contribute towards consideration of a methodology, is the relationship between human beings and their environment. Burrell and Morgan's (1979) model presents the opposing dimensions of human nature as *'determinism'* and *'volunterism'.* Determinism portrays humans as responding mechanically and deterministically to their environment. Within the objective extreme of Morgan and Smircich's (1980) framework, human beings are perceived as products of the external forces in the environment to which they are exposed. In contrast, volunteerism assumes humans are initiators of their own actions with free will and creativity, producing their own environments (Cohen *et al.*, 2007). At the subjective extreme of Morgan and Smircich's (1980) framework, it is assumed that humans are intentional beings, directing their psychic energy and experience in ways that constitute the world in a meaningful, intentional form. In considering that the subject of this research is, essentially, the strategic behaviour of human beings within temporary organisational environment, this study holds with the volunteerism position.

4.2.4 Methodological assumptions

The three sets of assumptions have direct implications on the methodological concerns of the researcher since the contrasting ontologies, epistemologies and assumptions about human nature, will in turn, require different research methods (Cohen *et al.*, 2007). Within Burrell and Morgan's (1979) model, the nomothetic dimension emphasizes the importance of basing research upon a systematic protocol and techniques employed in the natural sciences. Here, scientific investigation is focused upon the process of testing hypothesis in accordance with the principles of scientific rigor. Hence, methodology is predominantly concerned with the construction of scientific tests and the use of quantitative techniques for data analysis.

From the subjective perspective, the idiographic dimension is based on the view that the social world can only be understood by obtaining first hand knowledge of the subject under investigation. The principle concern is with the understanding of the ways in which the individual creates, modifies and interprets the world in which they exist. The idiographic approach, therefore, emphasizes the detailed analysis of subjective accounts and allows research subjects to unfold its nature and characteristics during the process of the investigation (Burrell and Morgan, 1979). As such, the idiographic approach embraces qualitative methods of investigation, but can also include quantitative. The norms of the natural science model and positivism are, therefore, rejected in preference for a view of social reality as a constantly shifting emergent property of individuals' creation (Bryman and Bell, 2007).

Following the interpretive paradigm that this thesis will be following, an inductive approach to the research is assumed. Although, as advised by Saunders *et al* (2009), it is accepted that the labelling of interpretive paradigms being associated with inductive approaches, and positive paradigms being associated with deductive approaches is not a fixed rule. Despite this, within an inductive approach to research, theory is developed from the observation of empirical reality. Thus, general inferences are induced from particular instances (Collis and Hussey, 2009). Contribution to theory is the outcome of the research, as it evolves from the observation and findings of the study. This is in contrast to the deductive process where the researcher develops a theory and hypothesis and then designs a research strategy to test hypothesis (Saunders *et al.*, 2009).

In describing some of the main methodologies used with in the social sciences, both Collis and Hussey (2009) and Remenyi *et al.* (1998) draw a distinction between those methodologies typically used within a positive paradigm and those used within interpretivism. However, they also advise that a number of research approaches are adaptable from either a positivist or an interpretivist philosophical position. In accepting that methodological choice is guided by philosophical positions, Saunders *et al* (2009) also propose that the choice of methodology should be guided by the suitability to answer the research question, the ability to meet the research objectives, and the amount of time required and resources available.

Methodology	**Philosophical Position**
Action Research	Strictly interpretivist
Ethnography	Strictly interpretivist
Grounded theory	Strictly interpretivist
In-depth surveys	Mostly interpretivist
Case Study	Have scope to be either positive or interpretivist

Table 4.2: Research Methodology. *Source:* Adapted from Remenyi *et al.* (1998)

Table 4.2 identifies the main methodologies within the interpretivist paradigm. In respecting Saunders *et al's* (2009) advice and the framework presented by Morgan and Smircich (1980), each methodology is considered for appropriateness within this study and discussed in the following sections.

4.2.4.1 Action research

Kurt Lewin (1946) defined action research as the process of organisational change having *"spiral of steps, each of which is composed of a circle of planning, action, and fact-finding about the result of the action*" (Lewin, 1946: 38). In contrast to typical models of social enquiry, action research acknowledges the researcher as an active participant in the process, rather than a passive observer (Connaughton and Weller, 2013). Typically, the researcher is part of the organisation in which the research and the change process is taking place, rather than being an object of study (Coghlan and Brannick, 2005; Saunders *et al.*, 2009). Action research also involves a degree of intervention on the part of researcher in the phenomenon being studied. This is emphasised by the iterative nature of the methodology where action planning is taken, following a diagnoses of the problem and evaluation of the recommendations (Saunders *et al.*, 2009).

Although it acknowledged that the application of action research in construction management has been growing (Connaughton and Weller, 2013), the methodology was not considered appropriate for this study. In the first instance, organisational engagement for research of a strategic nature would have proved difficult due to issues of commercial sensitivity. Secondly, subjective assessment of project success, as discussed in Section 2.6, could only be analyzed on completion of the project task undertaken by the TMO. Thirdly, it was determined that active participation in the study would only address the research questions from a single organizational perspective.

4.2.4.2 Ethnography

Emanating from the field of anthology, ethnography is firmly rooted within the inductive approach (Saunders *et al.*, 2009). The purpose is to interpret the social world in the same way as the research subjects would describe and explain it. The main method of data collection in ethnography is participant observation, where the researcher becomes a full member of the group being studied (Collis and Hussey, 2009). Due to the wide variation in human behaviours, ethnography involves unstructured fieldwork, observing people in their natural settings, and participating in daily activities, which necessities the research processes to be unstructured, flexible and responsive to change (Burgess, 1982; Saunders *et al.*, 2009).

Although a significant number of disciplines use ethnography, the methodology was not considered appropriate to address the aims of this study. Ethnography normally takes place within in a clearly defined natural setting. It is also, usually, necessary for the researcher to become involved within the group being studied for a substantial period of time (Remenyi *et al.*, 1998). Due to the limitations of resources and time, this would restrict the collection of data to either the project level, or the organisation level of the client organisation, and would, therefore, not address the overall research questions of the study.

4.2.4.3 Grounded Theory

Grounded theory is commonly associated with the inductive approach. The theory-discovery methodology enables the researcher to develop a theoretical account of the general features of a topic whilst simultaneously grounding the account of empirical observations or evidence (Glaser and Strauss, 1967). In this way, theory from data is

systematically gathered and analyzed throughout the research process, and involves an iterative process between data collection and data analysis to establish the conditions in which a theory will or will not hold (Strauss and Corbin, 1998). This is in contrast to positive studies that begin with a theoretical framework, before establishing hypothesis and collecting data to test the hypotheses. Remenyi *et al.* (1998) propose that the grounded methodology normally relies heavily on the use of in-depth interviews with experts in the field of study for the collection of evidence that will be used in an inductive way in the generation of theory.

However, as discussed in Chapter 3, research questions have evolved from the literature review, along with a conceptual model to be examined. Therefore, theory evolving from the research is not grounded under the definition of classic grounded theory (Glaser and Strauss, 1967), rather the study contributes to existing theory through an inductive process.

4.2.4.4 In-depth surveys

Remenyi *et al.* (1998) describes in-depth surveys as being used to generally attempt to obtain detailed in-depth evidence from a relatively small number of informants through a series of interviews. In contrast to questionnaire surveys, in-depth surveys tend to be unstructured and informal, designed to elicit in-depth responses and nuances. Although, able to be used from an interpretivist position, in-depth surveys were not considered appropriate to address the aims of the study as they do not readily allow for data collection within a bounded context, that enables focus on the specific research questions raised in Chapter 3.

4.2.4.5 Case study

The case study methodology is widely used in organisational studies and across social disciplines, including sociology, anthropology and industrial relations (Hartley, 2004). Eisenhardt (1989b) describes it as *"a research strategy which focuses on understanding the dynamics present within single settings"* (Eisenhardt, 1989b: 534). According to Yin (2014), the distinctive need for case study research arises out of the desire to understand complex social phenomena that allows investigators to focus on a *'case'* and to retain a holistic and real-world perspective. Hence, Yin (2014) defines a case study as an empirical enquiry that:

> *"…(1) investigates a contemporary phenomenon in depth and within its real world context, especially when (2) the boundaries between the phenomenon and context may not be clearly evident"* (Yin, 2014: 16).

A distinctive feature of case studies is that they can employ an embedded design that consists of multiple levels of analysis within a single case (Eisenhardt, 1989b; Yin, 2014). Consequently, the '*monographic approach'* (Hamel *et al.*, 1993: 1) employs various methods (Hartley, 2004) and multiple sources of evidence to investigate a particular contemporary phenomenon (Robson, 2002). Yin (2014) also informs that within case study research there will be many more variables of interest than data points and, therefore, relies on triangulating data from multiples sources of evidence. Data collection methods include, but not limited to, archives, interviews, questionnaires and observation.

Despite the multiple methods used within cases study research, the approach has become a common strategy for conducting qualitative research (Stake, 1995). As explained by Meyer (2001), the key difference between the case study and other qualitative designs, such as grounded theory and ethnography, is that the case study is open to the use of theory or conceptual categories that guide the research and analysis of data. In contrast, grounded theory and ethnography prepossesses the theoretical perspectives are grounded in and emerge from first hand data (Glaser and Strauss, 1967). This is notwithstanding Eiesenhardt's (1989b) seminal paper describing how to build theories from case studies.

In considering the philosophical position of this thesis, and the research questions to be addressed, the case study methodology was deemed the most appropriate form of enquiry for this study. The potential to conduct intensive and detailed analysis through individual cases allowed for an in-depth understanding of the strategic nature of TMOs, which, as established in Chapter 3, has not been previously documented. Robson (2002) also perceives that case study design is useful when the aim of the study is to gain a rich understanding of the research perspective and the process being endorsed. Moreover, Sutrisna and Barrett (2007) propose that the case study approach is a reliable method for capturing rich information in complex situations such as construction projects.

4.2.5 Axiological assumptions

Finally, a number of scholars have introduced another level of questions considered necessary to fully define enquiry within a paradigm (Heron and Reason, 1997; Saunders *et al.*, 2009; Fitzgerald and Howcroft, 1998). The axiological level considers the role of values in research and the role the investigator's value plays in the all stages of the research process (Saunders *et al.*, 2009). Heron (1996) argues that an individual's values are the guiding reason for all human action. Whereas, the ontological, epistemological and methodological assumptions are about matters to do with truth, Heron and Reason (1997) propose that the axiological assumption is about values of being and about what humans state are to be valued by virtue of what they are.

From the positivist perspective the researcher's view of the role of values in research is that the research is undertaken in a value-free way (Saunders *et al.*, 2009). The researcher is independent of the data, and maintains an objective stance. In contrast, Saunders *et al.* (2009) defines the interpetivist, axiological perspective as the research being value bound, where the researcher is part of what is being researched and cannot be separated.

4.3 Research Design

Research design refers to the provision of a framework for the collection and analysis of data (Bryman and Bell, 2007). Hartley (2004) adds that research design should also make the argument for the logical steps that link the research questions to data collection, analysis and interpretation, in a coherent way. As discussed in Section 4.2.4, the case study methodology was judged to be the most appropriate strategy to address the aim, objectives and research questions addressed in this study. However, as noted by Meyer (2001), in comparison to other research strategies, there are virtually no specific requirements guiding case study research.

This section presents an outline of the research design, by drawing on the frameworks of Yin (2014) and Eisenhardt (1989b) who provide valuable guidance for the design of case-studies. The appropriate elements of both Yin (2014) and Eisenhardt's (1989b) frameworks are considered, in relation to the philosophical position of this study, as discussed in Section 4.2. Drawing on these, an overview of the research design for this study is presented.

4.3.1 Overview of Research Design

Yin (2003) presents a positivist/post-positive approach to research design in which he sets out a prescriptive process that includes five components of research design that are considered equally important. These are summarized in Table 4.3, with the application to the research design of this thesis identified at each stage.

Stage	Component	Explanation	Application to this thesis
1	A case study's questions	Clarification of the nature of study questions through literature and previous studies.	• Addressed in Section 3.8 of the literature review
2	Its proposition, if any	The propositions direct focus on what should be examined within the scope of the study. Some studies, for legitimate reasons, may not have study propositions, eg. Exploratory research.	• Conceptual framework presented in Section 3.9
3	The unit of analysis	Defining of the entity in the case study to be investigated and bounding the case. A unit of analysis can be single organisation, a single location, an individual or single event (Bryman and Bell, 2007)	• Addressed in Section 4.3.4 of the methodology chapter
4	The logic of linking the data to the propositions	Developing a strategy to matching case study data to concepts of interest. Techniques include pattern matching, explanation building, time-series analysis, logic models, and cross-case synthesis.	• Cross-case synthesis in Chapter 6
5	The criteria for interpreting the findings.	Determine how the data from the case will inform the findings. This involves identifying and addressing rival explanations.	• Addressed in Chapter 6

Table 4.3: Components of Case study design. *Source:* Yin (2014)

In contrast, Eisenhardt (1989b) takes an inductive approach to research design, in which she sets out a *'roadmap'* for the building of theories from case study research. The framework, illustrated in Table 4.4, synthesizes the previous work on qualitative methods with the design of case study research by building upon Glaser and Struass' (1967) research into grounded theory.

Step	Activity	Application to this thesis
Getting Started	Definition of research question Possibly a prior constructs Neither theory nor hypotheses	• Research questions and prior constructs presented in Section 3.8 of the literature review. • General theories discussed within the literature review and developed in Chapter 6.
Selecting Cases	Specific population Theoretical, not random, sampling	• Purposive sampling, rather than theoretical sampling is discussed in Section 4.4.1
Crafting Instruments and Protocols	Multiple data collection methods Qualitative and quantitative data combined Multiple investigators	• Instrumentation choice discussed in Sections 4.4.4 • Findings strengthened through the triangulation of evidence. • The use of secondary data to support the analysis is discussed in Section 4.4.8 • Single investigator used for PhD thesis.
Entering the field	Overlap data collection and analysis, including field notes Flexible and opportunistic data collection methods	• Data analysis commenced before fieldwork was complete to allow for emerging themes from each case, as described in Section 4.5
Analyzing data	Within-case analysis Cross-case pattern search using diverging techniques	• Data analysis approach is discussed in Section 4.5 • In-case analyses of each case are provided in Chapter 5, • Cross-case analysis and outcomes of the analysis are presented in Chapter 6.
Shaping hypothesis	Iterative population of evidence for each construct Replication, not sampling, logic across cases Search evidence for "why" behind relationships	• Cross case analysis in Chapter 6 allows for pattern matching. • Replication logic discussed in Section 4.3.2.
Enfolding literature	Comparison with conflicting literature Comparison with similar literature	• The discussion in Chapter 6 relates the findings from the empirical work to literature reviewed in Chapters 2 and 3.
Reaching closure	Theoretical saturation when possible	• Models contributing to theory presented in Chapter 6

Table 4.4: Process of theory building from case study research. *Source:* Eisenhardt (1989b)

Although, the original work of Glaser and Strauss (1967) has evolved, grounded theory has remained an iterative approach between data collection and data analysis (Strauss and Corbin, 1998). Within grounded theory, cases would be selected throughout the theory building process. However, in Eisenhardt's (1989b) model, the researcher is

directed to select cases that replicate or extend theory early in the process, before entering the field with the rationale being, in order to control extraneous variation and help to define limits for generalizing and findings. Another deviation from the grounded theory approach is that Eisenhardt (1989b) does not suggest a continuous cycle between data collection and analysis, instead the suggestion is to shape hypothesis and develop theory from the data previously collected. Although this study does not apply a grounded theory methodology, as justified in Section 4.2.4.3, Eisenhardt's (1989b) framework is considered valuable to guide the research design of the thesis. In drawing comparison between the models, the research within this study is closer aligned with Yin's (2014) model, but does draw on Eisenhardt (1989b) for guidance.

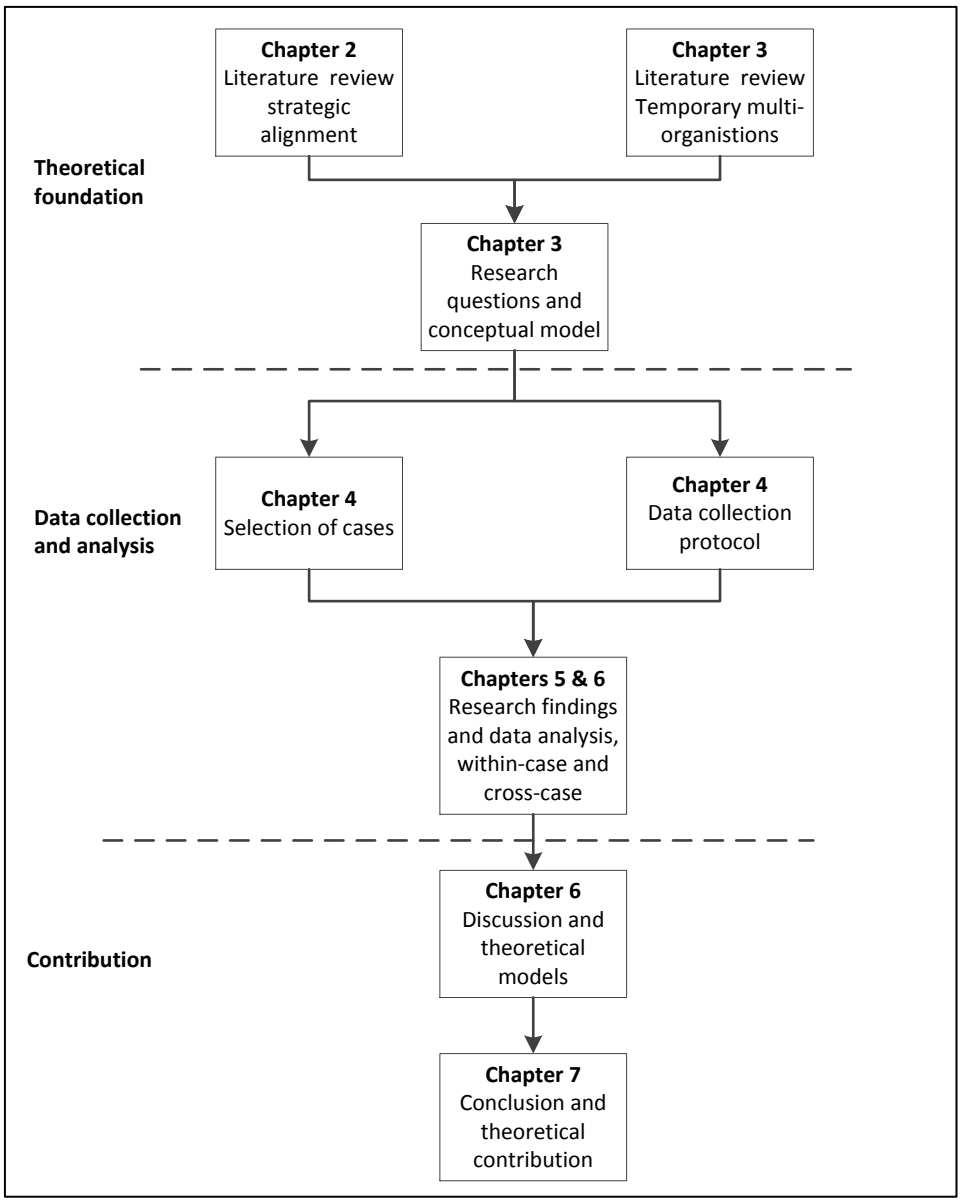

Figure 4.2: Overview of the research design

In considering the models presented in Figure 4.1 and Figure 4.2, an overview of the research design is illustrated in Figure 4.2. As shown, the research is divided into three stages of theoretical foundation; data collection and analysis; and contribution.

Building a theoretical foundation for the study involved a review of the extant literature on the two theoretical areas of strategic alignment, from within the strategic management literature, and temporary originations from within the literature on organizational theory, project management and construction management. Definition of the research questions followed a review of the literature on the two theoretical areas of strategic alignment and temporary originations. A conceptual model in Figure 3.10 was developed from themes emerging from the literature review and used as the basis for the empirical stage of the study.

The first phase of data collection and analysis involved selection of relevant cases-studies to address the research questions of the thesis, and design of the research methods for the collection of data. These processes are discussed in Section 4.3.1 and Section 4.4, respectively. The second phase involved, systematic, within-case and cross-case analysis of the case studies under investigation. The findings from each case study are discussed in Chapter 5 and synthesized in Chapter 6, where the research outcomes are presented.

The final stage of the research involves answering the research questions in light of the research findings and literature reviewed as part of the theoretical foundation, to achieve the research objectives. Two models making contributing to theory are presented in Chapter 6. The first model, presented in Figure 6.3, identifies how varied actors within the TMO measure project success. The second model, presented in Figure 6.5, is the definitive model of the thesis and explains the complexities of strategic alignment within the context of a TMO. Contributions to theory are discussed in Chapter 7, along with contribution to practice. Finally, implications and suggestions for further research are proposed.

4.3.2 Establishing case study type

The choice of case study will be guided by the objectives of the research (Hartley, 2004) or, and by, the overall study purpose (Baxter and Jack, 2008). Yin (2014) draws a distinction between, *'explanatory'*, *'exploratory'* and *'descriptive'* case studies. It is

proposed that the type of case study used will be dependant on three conditions; (1) the type of research question posed; (2) the extent of control a researcher has over actual behaviour events; and (3) the degree of focus on contemporary as opposed to entirely historical events. In contrast, Stake (1995) makes a distinction between *'Intrinsic'*, *'Instrumental'* and *'Collective'*. Baxter and Jack (2008) present a summary of varied case study types, adopted in Table 4.5.

Case Study Type	Definition
Explanatory	A case study whose purpose is to explain casual links in real-life interventions that are too complex for survey or experimental strategies. Explanatory case studies focus on "how" or "why" a sequence of events did or did not occur. The case study, therefore, considers the operational links that need to be traced over time, rather than mere frequencies (Yin, 2014).
Exploratory	A case study whose purpose is to explore those situations in which the situation being evaluated has no clear, single set of outcomes. This type of case is used to identify the research questions or procedures to be used in a subsequent research study, which may or may not be a case study (Yin, 2014). Exploratory case studies tend to be descriptive and focuses primary on "what" questions with the goal to develop a pertinent hypothesis.
Descriptive	A case study whose purpose is to describe a phenomenon in its real world context (Yin, 2014)
Intrinsic	A case study whose purpose is to gain a better understanding of a particular case. The purpose is not theory building but is pursued when the case itself is of primary interest, not secondary interest (Stake, 1994; Stake, 1995).
Instrumental	A case whose purpose is to facilitate understanding of particular phenomena. The case is of secondary interest and is examined mainly to provide insight into an issue or to redraw a generalisation (Stake, 1994; Stake, 1995).
Collective	Several cases within the same study (Stake, 1995). This explanation is consistent with Yin's (2014) description of multiple case studies, discussed in Section 4.3.3

Table 4.5: Definitions and Examples of Case Study Types. *Source:* Adapted from Baxter and Jack (2008)

As discussed in Chapter 1, the primary objective of this study is to explore how varied organisations within a TMO align multiple strategic objectives through a single construction project. The purpose of the case studies are to gain a deeper understanding into the challenges of aligning multiple objectives within the context of a TMO and analysing strategic behaviour of TMO actors. They therefore fit within a number of case study types shown in Table 4.5, and not restricted to any single one.

4.3.3 Selecting between single and multiple case studies

Whereas, Eisenhardt's (1989b) process advocates the use of multiple case studies to build theory, Yin (2014) distinguishes between single and multiple case study design. Yin (2014) advises that a single case study may be an appropriate design when the case is either critical to the theoretical proposition; it represents an extreme case deviating from theoretical norms; it is a *'common case'* that captures circumstances and conditions of everyday situations; it is a revelatory case and provides the opportunity to observe and analyse a phenomenon previously inaccessible to social enquiry; or it is a longitudinal case, studying the same case at different points in time. Hartley (2004) further adds that single case studies may be the only feasible option when access difficulties are present, when there are limited resources or the rarity of the phenomena precludes wider study.

Dyer Jr and Wilkins (1991) also proposes that single-case research produces more and better theory than multiple-case research. However, this is disputed by Ozcan and Eisenhardt (2009), who argues that *"multiple cases are effective because they enable collection of comparative data, and so are likely to yield more accurate, generalizable theory than single cases"* (Ozcan and Eisenhardt, 2009: 249). Leonard-Barton (1990) also caution that a single case study is subject to limits in generalizability and several potential biases, such as misjudging the representativeness of a single event (Tversky and Kahneman, 1986), and, therefore, suggest that multiple cases augment external validity and help guard against observer biases.

The advantage of pursing a multiple case study design is that it allows for comparative analysis across a number of cases. Miles and Huberman (1994) suggest that by looking at a range of similar and contrasting cases adds confidence to the findings, as researchers can understand an individual case single case findings, by grounding it, specifying how and where, and if possible, why it behaves as it does. Eisenhardt (1991) also argues that comparison of cases clarify as to whether an emergent finding is only idiosyncratic to a single case or a consistent finding among multiple cases.

Yin (2014) proposes that the distinct advantage of pursing multiple case studies is that it allows for replication of design. Within Yin's (2014) framework, replication logic is emphasised. This involves selecting two or more cases and ensuring that the same methods are applied in each case so that findings can be compared. Yin (2014) makes

the argument that only with such replications would the original findings be considered robust. In considering replication logic to be analogous to that used in multiple experiments, Yin (2014) advises that each case in the study must be carefully selected so it either (a) predicts the same results (*a literal replication*) or (b) predicts contrasting results but for anticipated reasons (*a theoretical replication*). The use of replication logic also allows for analytical generalisation, in which a previously developed theory is used as a framework for comparison of a study's empirical results. As explained:

> *"If two more cases are shown to support the same theory, replication may be claimed. The empirical results maybe considered yet more potent if two or more cases support the same theory but do not support an equally plausible rival theory*" (Yin, 2003: 38)

It is therefore concluded that multiple case studies provide more robust findings than single case studies. This is partially due to the opportunity for triangulation of evidence (Herriott and Firesone, 1983). In addition, Taylor *et al.* (2011) stresses the importance in considering that case-to-case differences in the construction industry are likely to vary more than in other industries, and therefore studying multiple case studies within this context is of particularly significance to generate insights that can be generalised.

4.3.4 Unit of analysis

Merriam (1998) proposes that the single most defining characteristic of case study research lies in delineating the object of study. Merriam (1998) further argues that if the phenomenon of study is not intrinsically bounded, it is not a case. A number of authors support this notion by viewing the case study as a '*bounded system'* (Smith, 1978), '*integrated system'* (Stake, 1995) or being limited by scope with clearly defined conceptual boundaries (Bromley, 1986).

However, Yin (2014) advises that identifying the units of analysis that form the boundaries of a case is not a straightforward process. Within the social sciences, a case could consist of single organisation, a single location, a person or a single event (Bryman and Bell, 2007), whereas, a unit of analysis *"could be almost any activity, process, feature, or dimension of organisational behaviour"* (McClintock *et al.*, 1979: 3). A case study may also involve examination of more than one unit of analysis, as proposed by Fletcher and Plakoyiannaki (2010):

> *"…when a single case study examines only the global nature of an organization, a holistic design is used, but when sub-units are analyzed in a single setting an embedded single case study approach is used"* (Fletcher and Plakoyiannaki, 2010: 839).

To illustrate this, Yin (2014) presents a 2x2 matrix that distinguishes between holistic and embedded units when using both single and multiple case studies.

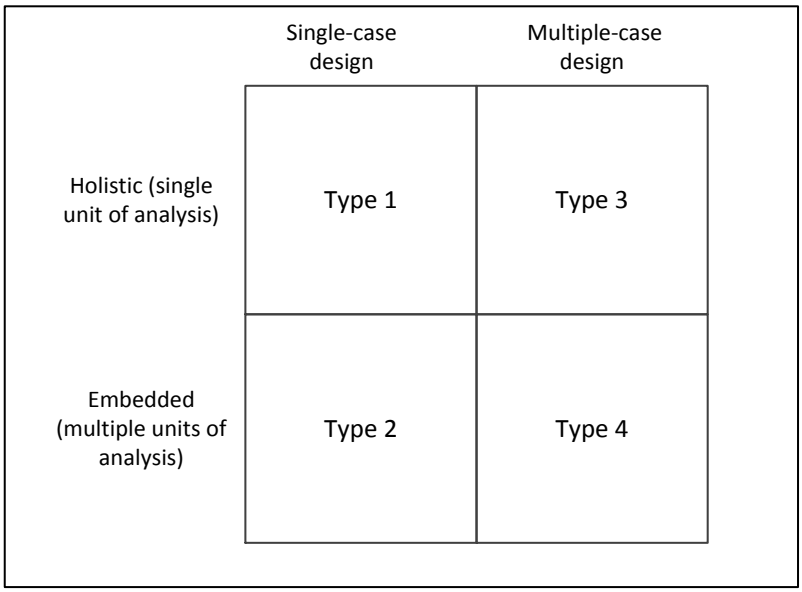

Figure 4.3: Basic Types of Design for Case Studies. Source: Adapted from Yin (2014)

In Yin's (2014) model, illustrated in Figure 4.3, holistic (single unit of analysis) is categorized as Type 1 case design, This is used when a single case study is examining only the global nature of the organisation or programme (Fletcher and Plakoyiannaki, 2010). Yin (2014) also recognises that a single case may involve analysis at more than one level. This occurs when, within a single case, attention is given to sub-units, such as groups within a single organisation. This type of design is categorized as Type 2, embedded (multiple units of design). Multiple, holistic case design is categorized as Type 3, and multiple case design, that involves the examination of embedded sub-units of analyse is categorised as Type 4.

Level	**Units**
Cases	Temporary multi-organisations
Units of analysis	Individual organisations participating in each TMO
Embedded unit of analysis	Individual actors within each TMO member organisation

Table 4.6: Cases, units of analysis and embedded units of analysis.

This study fits within Type 4 of Yin's (2014) matrix. The relationship between cases, units of analysis and embedded units of analysis are defined in Table 4.6. The research design adopts a multiple case study approach, where the cases forming the research are temporary multi-organisations in public sector construction projects. The units of

analysis in each case are the individual member organisations that form each TMO. The embedded unit of analysis are the individual actors representing each member organisations within each TMO. The boundaries of the each case include those actors within the client organisation and actors within the consultant and contracting organisations that are directly involved in the construction project. The boundary of each case study is illustrated in Chapter 5, when describing the structure of each TMO.

4.3.5 Validity and Reliability

Taylor *et al.* (2011) makes two valid criticisms of case study research deign. Firstly, they find that design tends to be limited to only one or a few cases. Hence, much of the criticism focuses on how investigators can make justifiable generalizations from a limited number of samples, or indeed a single case study (Flyvbjerg, 2006; Eisenhardt, 1989b). Talyor *et al's* (2011) second criticism concerns the general lack of rigour in case study design:

> *"... many case-study research projects are executed with insufficient precision, quantification, objectivity , or rigor in which investigators have not followed standard procedures or allowed a biased view to influence the direction of the findings."* (Taylor *et al.*, 2011: 303).

Hamel *et al.* (1993) are similarly critical at the lack of rigor in the collection, construction and analysis of empirical data in the social sciences. They propose a link between lack of rigour and research bias, which is introduced through the subjectivity of the researcher, as well as, the research participants (Hamel *et al.*, 1993). In order to address the criticism and concerns over standards in data collection and analysis, Yin (2014: 46) identifies four tests that are commonly used to establish quality of empirical social research. These are identified as follows:

- **Construct Validity**: Establishing correct operational measures for the concepts being studied.
- **Internal Validity**: Seeking to establish a causal relationship, whereby certain conditions are shown to lead to other conditions, distinguished from spurious relationships. However, within Yin's (2014: 46) framework, internal validity is only applicable for explanatory or causal case studies.
- **External Validity**: Defining the domain to which a study's findings can be generalised.
- **Reliability:** Demonstrating that the operations of a study, such as the data collection procedures, can be repeated with the same results.

Test	Case study tactic	Tactic applied
Construct Validity	Use multiple sources of evidence	• Convergence of evidence from multiple interviews from different organisations and hierarchical levels, see Section 4.4.7 and multiple sources of secondary data, see Section 4.4 • Triangulation of evidence to form within-case and cross case analysis discussed in Section 4.4.4
External Validity	Use replication logic	• Replication logic used in data collection, discussed in Section 4.4.1 • Standardised guide used for semi-structured interviews, see Section 4.4.6
Reliability	Use case study protocol	• Case study protocol discussed in Section 4.4.2 • Thematic matrices from template analysis discussed in Section 4.5.2 and attached in Appendix F.
	Develop case study data-base	• Develop Case study register. A sample in Appendix B • Data source log for each case attached in Appendix C.

Table 4.7: Validation and reliability tactics applied within the research

Drawing on Yin (2014), the tests utilised in this study are summarised in Table 4.7, identifying the specific tactics applied to ensure validity and reliability within the research. Internal validity in isolation is not considered, as establishing a chain of events and causal relationships between variables fits within the positive paradigm.

4.4 Data Collection

This section describes the data collection process used within this thesis, in greater detail. This includes selection of cases for data analysis, within-case sampling, design of the data collection protocol and selection of data collection methods.

4.4.1 Number of case studies

Whereas, no specific guidance is given to the number of cases to be included within a study, Yin (2014) suggests that the number of replications adds certainly to the results and proposes that six to ten cases *"provide compelling support for an initial set of propositions"* (Yin, 2014: 57). Whereas, Eisenhardt (1989b) suggests that between four and ten cases studies would be sufficient for theory generalisation.

In contrast, Miles and Huberman (1994) discourage cases design with over fifteen cases, as this can result in large unwieldy volumes of data and consequent loss of detail distinctiveness and context. In considering the complexity of case studies under investigation, the number of interviews within each case, and the limitation of resources to collect data, it was considered that research questions could be satisfactory answered and objectives achieved through four in-depth case studies that satisfied the criteria listed in the following section.

4.4.2 Case study selection

In contrast to theoretical sampling as proposed in Eisenhardt's (1989b) framework for generation of theory, this study takes a purposive sample approach to select cases for the research. Within this non-probability sampling method, subjective assessment of the sample is appropriate (Remenyi *et al.*, 1998). Purposive sampling involves drawing on the judgement of the investigator to select cases that answer the research questions and meet the objectives of the study (Saunders *et al.*, 2009). This is appropriate only when a limited number of the population can serve as primary data sources, and when there is a requirement to select cases that are particularly informative (Neuman, 2006).

Following Yin's (2014) guidance for replication logic, the selected cases for this study were chosen to, either literally or theoretically, replicate other cases within the sample. Cases were purposely selected according to the following judgement criteria:

- The case must have involved a temporary multi-organisation within the construction sector, where members of the TMO are employed (either permanently or temporarily) by different member organisations. This is contrast to property developers that may employ varied construction skills within a single organisation.
- In order to investigate the strategic alignment of projects (Chapter 2), all cases must have involved a single client that has established a TMO to realise their strategic objective through a single construction project.
- In order to investigate temporary organisational theory (Chapter 3), within the context of each case, all construction projects must have had a fixed deadline by which time the project should have been completed.
- To ensure replication logic, it was it was necessary for comparative reasons that all cases were from the same industry sector. In considering the differences between the management of construction projects within the private and public sectors (Songer and Molenaar, 1996), it was judged that cases from within the public sector would

provide better results, due to the inherent formal structures, processes and transparency of procedures.

- To ensure international and regional consistency, all cases were based in UK, within a 50-mile radius of each other.
- It was judged that the construction projects forming the cases, needed to be a recently complete, preferably within 24 months from the start of data collection. This was because of the perceived difficulty in conducting historical construction-based case studies. As discussed in Chapter 3, the TMO inevitably disbands on completion on the project, and as reported by the Construction Industry Training Board (BMG, 2015), there is a high degree of mobility within the UK construction industry. As a consequence, it was considered that there would be difficulties in contacting actors that had left the construction firm represented within the TMO. Another reason for the use of recently completed case studies was to ensure that participants in the study would recall critical incidents.
- The willingness of client organisations to participate in the study and divulge the necessary data required for analysis to the support the snowballing sampling strategy, discussed in Section 4.4.6, and provides encouragement to other firms to participate in the research.

Cases studies selected for investigation are outlined in Table 4.8, including a brief description of the construction project and a summary justifying the selection of each. For reasons of confidentiality, cases are referred to a Case A, Case B, Case C and Case D respectively.

Case	Project Type	Project Description	Client Organisation	Budget	Duration	Procurement	Reason for selection of case
A	New build, student halls of residence	Construction of modern student accommodation to replace existing residences.	Higher Education provider	£12m	19 months	Traditional	• Knowledge of client organisations structure and processes. • Meets main selection criteria as discussed in section 4.4.1 • Fixed deadline for completion before start of semester • Willingness by client organisation to allow access to data
B	New road, civil engineering	Second phase of a new 4-lane public carriageway and associated regeneration works	Public sector authority	£26m	36 months	Design & Build	• Accessibility due to contacts in the client organisation • Meets main selection criteria as discussed in section 4.4.1 • Fixed deadline for completion before the start of the preparations for the major sporting event. • Willingness by client organisation to allow access to data •
C	Laboratory and office fit-out	Refurbishments of new build office building for the relocation and accommodation of laboratory and office facilities.	Environmental regulator and flood warning authority	C£7m*	12 months	Design & Build	• Accessibility due to contacts in the client organisation • Meets main selection criteria as discussed in section 4.4.1 • Fixed deadline aligned with relocation of staff. • Willingness by client organisation to allow access to data
D	New Build, visitor centre	New build of a tourist visitor centre and to replace existing and conservation of existing battle site monuments	Conservation charity for the protection and promotion of cultural heritage	£9.2m	22 months	Traditional	• Meets main selection criteria as discussed in section 4.4.1 Fixed deadline for completion of 700th anniversary commemorations • Willingness by client organisation to allow access to data

Table 4.8: Summary of cases studies forming the research

4.4.3 Case study protocol

Both, Eisenhardt (1989b) and Yin (2014) highlight the need to develop a case study protocol that can be used as a guide for data collection across multiple cases studies. Miles and Huberman (1994) also suggest such a protocol should outline the rules and procedure that govern the research of the case. This is to ensure uniformity of data collection and analysis, thereby, increasing the reliability of the case study research (Yin, 2014).

As a single investigator conducted the research, the main purpose of the case study protocol was to provide a guide for the data collection and reporting procedures across all cases. This was required for replication logic and to support the reliability of the data. Drawing on Yin's (2014) guidelines for development of a case study protocol, the protocol for this study is summarised in Table 4.9.

Stage	Protocol
A. Overview of Case Study	• Establish background to case through available secondary data and initial meeting with contact from client organisation.
B. Data Collection	• Develop case study register of data sources, identifying organisation, role and contact details. A sample in Appendix B • Send introductory e-mail to source explaining the purpose of the study and requesting a meeting. • Arrange interview meeting with source. • Confirm anonymity of case and participant • Forward interview questions at least two days prior to meeting • All interviews recorded permission of the participant • Identify further sources data during meeting • Assign catalogue number to all captured data. An explanation of cataloguing is explained in Appendix C1.
C. Data Collection Questions	• Interview questions were designed to address the research questions of the study and the research objectives. A copy of the interview guide is contained in Appendix A.
D. Case Study Analysis and Reporting	• Codes created for each data source recorded in the data source log for each case. Copies of the data source logs are contained in Appendix C. • Each interview logged and transcribed using MS Word document format. • Each interview coded using NVivo. Coding system used within this study is incorporated within the Initial Template contained in Appendix D. • Summary of themes evolving from each case are summarised in the Final Template contained in Appendix E, and a thematic matrix for each case. Copies of each thematic matrix is contained in Appendix F.

Table 4.9: Summary of case study protocol

An overview of each case and a description of each TMO are provided within the introduction to each case study in Chapter 5. For the purpose of replication logic, the

findings of each case study are reported in a consistent structure, as described in Section 5.1.

4.4.4 Instrumentation Choice

Interviews, documentation and archival records were identified as the most appropriate instruments for collection of data. Semi-structured interviews allowed flexibility to investigate emerging factors and critical incidents that occurred during each construction project, whilst maintaining rigour and reliability in data collection. Documents and archival records were also collected as sources of data to support and augment evidence from the semi-structured interviews, as well as, providing additional information to support the findings from of each case study.

Saunders *et al.* (2009) advise when using a case study strategy it is necessary to triangulate multiple sources of data within a single case. Bryman and Bell (2007) also suggests that triangulation though multiple data sources, or methods, support the reliability and validation of the study. Denzin (1978) distinguishes between four forms of triangulation

1. Data triangulation, which entails gathering data through several sampling strategies, so that segments of data at different times and social situations, as well as, a variety of data sources, are gathered.
2. Investigator triangulation, which refers to the use of more than one researcher in the field to gather and interpret data.
3. Theoretical triangulation, which refers to the use of more than one theoretical position in interpreting data.
4. Methodological triangulation, which refers to the use of more than one method for gathering data.

Each form is considered for appropriateness for this research. The approaches to triangulation applied within PhD thesis are outlined in in Table 4.10

Levels of Triangulation	Elements of Triangulation	Description
Data sources	Semi-structured interviews Documentation Archival records	• Triangulation between different sources
Interviews	Multiple perspectives	• Triangulation between different perspectives across all projects within the study
	Perspectives between different organisations	• Triangulation between different organisations participating within each project and across projects
	Perspectives between different levels within organisations	• Triangulation between different the project level and the organisation levels within each project and across projects
Archival records	Recorded minutes of progression meetings	• Triangulation between perceptions of project events and recorded minutes within each project

Table 4.10: Triangulation methods pursued in data collection stage

Research diaries and an electronic case study register were kept throughout the study to record persons contacted, dates of correspondence, interview meetings and relevant notes. All data, whether interview or document based, was electronically captured, assigned a catalogue number and entered into a data source log for each case (see Appendix B), to support the reliability of the research.

4.4.5 Semi-structured interviews

Under an interpretive paradigm, interviews are concerned with exploring *"data on understandings, opinions, what people remember doing, attitudes, feelings and the like, that people have in common"* (Arskey and Knight, 1999: 144). Within the context of multiple case studies, interviews enables the researcher to discover multiple realities of participants (Stake, 1995), and develop an understanding of the respondents world (Easterby-Smith *et al.*, 1991).

Easterby-Smith *et al.* (1991) advise that interviews for qualitative data maybe either unstructured or semi-structured. However, it was considered that, within this study, unstructured interviews, where the researcher uses an *aide-mémoire* as a brief set of prompts to guide a range of questions and topics, would not efficiently support the replication logic of the methodology adopted for this study. By comparison, in semi-structured interviews, the interviewer uses a research guide containing a list of questions on specific topics to be covered during the interview (Bryman and Bell, 2007). Remenyi *et al.* (1998) also maintain that when the research is conducted across a number of sites,

as is the case within this study, it is particularly important that an appropriate research instrument be used to systematise the collection of evidence and enable comparisons to be made during the analysis phase. Otherwise, the research runs the risk of collecting a wealth of evidence that, collectively, is difficult to generalise from (Sharp *et al.*, 2002).

'Face-to-face' was the preferred method of conducting each interview. Being in the presence of the participant makes it easier for the investigator to seek clarification of answers (Dialsingh, 2008). In the majority of cases, interviews were conducted at the participant's organisation or where most convenient for the interviewee. Where it was not possible to conduct interviews in person, primarily through the restraint of distance, a telephone interview or video-conferencing through Skype was used. There was a preference for interview by via Skype over telephone interviews, as this enabled many of the advantages of face-to-face, using available technology. Follow-up interviews were conducted as necessary, in particular, where there was a requirement for clarification of critical incidents.

As highlighted in the case study protocol, Table 4.9, interview questions were sent, via e-mail, to participants at least 48 hours prior to the interview being conducted. This allowed participants to prepare initial answers and recall critical incidents. This was considered best practice, as most participants had relocated to other projects and in some cases, other organisations. Answers to questions were explored during the interview process. Also, in order to gain trust from the participant and encourage agreement for a meeting, it was important that sources were made aware that the interviewee would not be asked to divulge confidential or sensitive information, and that they were comfortable with answering the questions that would be posed to them during the interview process. This is disused further within the discussion on research ethics in Section 4.6.

4.4.6 Interview design

Standardised questions that formed the basis of discussion within each interview were developed and refined through pilot-tests with an independent construction professional from within the construction industry. The pilot participant was considered most appropriate for the study, as he worked for a client organisation, managed projects within the public and private sector and had participated in varied temporary multi-organisations at differing levels. The pilot was used to test the relevance of the

questions, in terms of contribution to the research objectives. But also to test understanding of the questions by the interviewees. Following the initial pilot study, the questions were refined, re-tested and finalised for use within the research.

Each interview lasted between 45 and 60 minutes. Interviews consisted of fourteen standardised questions to ensure reliability was maintained within the study and data analysis is supported through replication logic. Depending on the role of the participant in the construction project, some questions were omitted and the wordings of some questions were refined during the interview. Also, following Saunders *et al's* (2009) guidance for conducting semi-structured interviews, the order of questions varied between interviews, depending on the flow of the conversion. Additional questions were also asked to explore participant responses to questions, or from critical incidents or observations highlighted by participants from previous interviews.

A copy of the interview guide is contained in Appendix A. The first set of questions sought to gain information about the participant. This was to allow categorisation of the participant for comparative purposes. An important part of the study was to draw comparison of perceptions between clients, consultants and contractors at different organisational levels. Introductory questions also asked about the role of the participant in the construction project, their employment status and when they joined the project. Thus, allowing for partial contribution to the construction project, as observed by Cherns and Bryant (1984).

The objective of the main interview questions was to gain individual perceptions of the underlying rationale behind the construction project, the strategic benefits of the project, and individual perceptions of project success. The remaining questions explored the perceptions and realities deriving from themes within the literature on temporary organisations. These included, perceptions of short deadlines within the construction industry, the procurement process, location factors and conflicting organisational objectives.

As discussed within the case study protocol in Table 4.9, all interviews were electronically recorded with the permission of the participant, and transcribed independently by a professional transcription agency. To ensure quality of the transcription was maintained, interviews were transcribed strict verbatim, including

preliminary discussions, repeats, laughs and pauses. The researcher then listened to each recording and edited the transcription prior to coding. Whilst, being a lengthy and detailed process, this allowed for detailed understanding of the respondent's perception, whist supporting the reliability of the data.

4.4.7 Within-case sampling

To answer the research questions presented within the thesis, it was necessary to collect data from actors participating within each TMO, and relevant actors from within the client organisation and member organisations participating within the TMO. In order to identify and make initial contact with potential interview participants, the snowball sampling technique was used to collect the required data for the research. Following Bryman and Bell's (2007) guidance, initial contacts were made with relevant key personal within each client organisation, and used as a vehicle for introduction with key actors from the varied organisations participating in each TMO.

Within the traditional snowball sampling technique, the precise extent of the population is difficult to identify (Bryman and Bell, 2007). In this study, the population derives from the member organisations and actors in each TMO. Therefore, once the organisations participating within the TMO were identified, the extent of the population could be estimated from the number of representative actors in each TMO member organisation. This was considered important to plan the data collection stage of the study, but also to establish when theoretical saturation of the data would be achieved (Eisenhardt, 1989b).

Group	Levels	Description
Client	Project Sponsor Director level Senior Project Management level Senior Management level	Client representatives involved in the inception and implementation of the project and concerned with the strategic value of the project to the organisation. This could be from the long-term strategic perspective of the project to the organisation or from a particular departmental end-user perspective
Consultants	Director / Senior Manager Project Team member	Consultants represent the external organisations involved in the project. This includes, external project management consultants, architects, engineers, quantity surveyors, structural engineers and designers..
Contractor	Director / Senior Contracts management Project Manager	Depending on the procurement process, the role of main contractor was to implement the project in accordance with guidelines of the client and consultants. Sub-contractors and utility suppliers were not included in the sample, as this would have extended the group to an unmanageable size.

Table 4.11: Participant groups for data collection

Determining relevant interview participants was based on the objectives of the research and the research questions of the thesis presented in Section 3.7. Multiple interviews were undertaken to gain perspectives across all organisations participating in the TMO and at differing hierarchical levels. For the purpose of comparative analysis, each actor was grouped as client, consultant or contractor. Within each group, the role of the actor within the construction project was recorded within a case study register and the relevant data source log. A description of each participant group is presented in Table 4.11.

Participant	Case A	Case B	Case C	Case D
Client	7	2	7	4
Consultant	4	1	4	3
Contractor	2	3	1	1
Total	**13**	**6**	**12**	**8**

Table 4.12: Number of interviews within each case data

39 participants were interviewed across the four cases studies. A code was created for each data source and recorded in the data source log for each case. Copies of the data source logs are contained in Appendix B. Table 4.12 shows the number of interviews and their positions within each case. Due to the different types of construction projects and procurement strategies, the number of participants varied across cases. The structure and relationship between participants is explored in Chapter 5.

4.4.8 Documents and archival records

Documentation and archival records were collected to provide the background to each case and to verify and supplement data used for triangulation. The nature of construction projects is that they produce a significant amount of documentation. Therefore, to avoid an overabundance of data, it was important to narrow and focus only on the documentation that would support the findings of the research. In addition, some organisations were cautious about releasing documentation that was, either potentially sensitive, or that could be seen as an advantage to competitors, such as records containing financial information.

The most useful archival documentation was the minutes of monthly progress meetings from each project. As is typical practice within construction projects, weekly meetings were held at the operations level to discuss specific technical issues, therefore outwith the scope of this study. Instead, monthly progress meeting were held at the management level to discuss the strategy and progress of the project, and were therefore judged to be more relevant to the research objectives.

Documentation Type	Case A	Case B	Case C	Case D
Minutes of monthly progress meeting	X	X		X
Project Management Reports	X	X	X	X
Closure reports	X		X	
Journal / Magazine articles		X		X
Internet articles	X	X	X	X

Table 4.13: Secondary data types used in study

Other useful documentation included project management and closure reports. These documents provided rationale for the project and client organisational judgements on the success of the project. Finally, Internet articles also provided useful backgrounds to the client organisations commissioning the project and enabled greater insight into the strategic rationale behind the projects. The type of documentation used in each case is shown in Table 4.13. A code was created for each secondary data source and recorded in each data source log, contained in Appendix B.

4.5 Data Analysis

Yin (2014) proposes that analysis of case study evidence is one of the least developed aspects in case study research, as there does not appear to be a standardised procedure to follow. However, in general, data analysis in qualitative research consists of

preparing and organising the data, then reducing it into themes through a process of coding and condensing of codes, before representing the data in figures, tables and discussion (Creswell, 2007). These general procedures are summarised in Table 4.14 through three different perspectives. Madison (2005) presents a critical ethnography perspective, whereas Wolcott (1994) uses a more traditional approach to research taken from ethnography and case study analysis. Finally, Miles and Huberman (1994) adopt a systematic approach to data analysis, which is applicable to case study research.

Analytic Strategy	**Madison (2005)**	**Huberman & Miles (1994)**	**Wolcott (1994)**
Sketching ideas		Write margin notes in field notes	Highlight certain information in description
Taking notes		Write reflective passages in notes	
Summarize field notes		Draft a summary sheet on field notes	
Working with words		Make metaphors	
Identify codes	Do abstract coding or concrete coding	Write codes, memos	
Reduce codes to themes information	Identify salient themes or patterns	Note patterns and themes	Identify patterned regularities
Counting frequency of codes		Counting frequency of codes	
Relating categories		Factoring, noting relations among variables, building a logical chain of evidence	
Relating to categories to analytical to framework in literature			Contextualize in Frame work from literature
Creating points of view	For scenes, audiences and readers		
Displaying the data	Create a graph or picture of the framework	Make contrast comparisons	Display findings in tables, charts, and figures; compare cases; compare with standard

Table 4.14: Comparison of data models of data analysis. *Source:* Creswell (2007)

As shown in Table 4.14, there are a number of consistencies between the three frameworks. All advocate the importance of identifying themes evolving from the research and displaying the data for comparison and analysis. However, drawing on

Miles and Huberman's (1994), in particular, three concurrent flows of activity; data reduction, data display, and conclusion drawing and verification, are applied within this study.

Data reduction refers to the process of *"selecting, focusing, simplifying, abstracting, and transforming the data that appear in written up field notes and transcripts"* (Miles and Huberman, 1994: 10). This was pursued through the development of abstract codes and concrete coding using template analysis, assisted by qualitative data analysis software, to identify the salient themes evolving from the data (Madison, 2005). Data display, is the second major flow of analysis activity in Miles and Huberman's (1994) definition. This was addressed through the creation of a thematic matrix and a casual display network for each case. This served to organise and compress information, making it amenable to further analysis and interpretation. The conclusions and findings drawn from the data set are reported in Chapters 5 and 6 of the thesis. Processes within each simultaneous stream are discussed in the following sections.

4.5.1 Data reduction - Computer assisted data analysis

The interview data, once transcribed, amounted to over 200,000 words, together with over 150 archival documents and reports forming the secondary data. The total capacity of data within the data management system was 1.04 GB, including audio recordings of each interview. In considering the volume of evidence collected to support the study, it as was necessary that a logical data management system was implemented and that a rigorous process of data reduction be developed.

Data reduction was supported through the use of computer assisted qualitative data analyse software (CAQDAS), as termed by Lee and Fielding (2011). The use of software designed for qualitative analysis has become widespread and significantly more advanced than early computerised coding and retrieving tools (Bazeley, 2013). Modern CAQDAS, programmes are particularly beneficial for data reduction when managing large amounts of texts, and have the ability to store multiple data types. This was was considered necessary in this study, where the data consisted of Word documents, portable document formats (PDF), and web-based sources. Creswell (2007: 165) summarises the advantages of CAQDAS programme as:

- Providing an organized storage file system that allows the investigator to quickly and easily locate material and store it in one place.

- Enable the investigator to locate material easily, whether this material is an idea, a statement, a phrase, or a word.
- Encourages the investigator to look closely at the data and think about the meaning of each sentence and idea.
- The concept-mapping feature of computer programs enables the investigator to visualize the relationship among codes and themes by drawing a visual model.
- A computer program allows the researcher to easily retrieve memos associated with codes, themes, or documents.

Despite the benefits of CAQDAS programmes, Bazeley (2013) expresses concern that that computers distance researchers from their data, and foster the dominance of a *'code and retrieve'* strategy for analysis. This was managed through a process of manually reviewing the data prior to digital coding, as discussed in Section 4.5.2. This ensured full understanding of themes emerging from each transcript, but also enabled a holistic overview of each case.

From the varied systems available, the NVivo CAQDAS programme was selected to extract evidence relevant to the research questions and identify salient the themes evolving from the data. The software supported multiple data types, provided structured organization of data and ideas emerging during the analysis, has the facility to query the data and find incidences with the text, and facilitates within and cross-analysis of multiple case studies. Furthermore, the software was made freely available within the Heriot-Watt University and enabled easy conversion of files between MAC and PC, which enabled the researcher to work from different locations.

To address concerns of time required to adequately learn to use CAQDAS programmes (Creswell, 2007; Saldana, 2013), the researcher undertook two training session in the use of NVivo, utilised the on-line support offered by the programme developers (QSR International), and followed the guidance offered within textbooks specifically written for qualitative data analysis with NVivo (Bazeley and Jackson, 2013).

4.5.2 Data Reduction – Template analysis

Prior to using the CAQDAS programme, a lean approach to coding was initially undertaken (Creswell, 2007), whereby preliminary coding generated a small list of categories that expanded as the research continued. As noted by Saldana (2013), coding

may need to go through a number of iterations before the coding set is adequate for the purpose of analysis. Therefore, drawing on the principles of template analysis (King, 1998), *a priori* codes were developed from the research questions stated in Chapter 3 and the interview guide in Appendix A.

Within the template approach, contextual data is thematically organized and analysed according to an initial template, developed from a set of codes *a priori* (King, 1998). The benefit of template analysis is that it also allows for codes to be added *a posteriori*, thus, enabling a final template to be modified and refined as the data is examined (King, 2004). This is in contrast to content analysis, where codes are predetermined and their distribution analysed statistically (Weber, 1985), and grounded theory where there is no *a priori* definition of codes (Glaser and Strauss, 1967). The approach of incrementally modifying the coding set throughout the data collection and analysis process, allowed the researcher to maintain a link between the literature, from which the research questions were developed, and themes evolving from the empirical data, without inhibiting the capture of new insights (Bazeley, 2013).

A priori codes within the initial template were organized hierarchically, with groups of similar codes clustered together to produce more general, higher-order codes. The higher order codes were also categorised under the themes emerging from the literature review. Following King's (1998) guidance, the main questions from the interview guide, which was developed from the research questions, served as the higher order codes, with subsidiary questions and probes as the lower order codes. To maintain clarity, initial codes evolving from the *a priori* themes were identified and categorised within a two level hierarchy. Although within the final template, this extended to three levels. The summary of initial template with *a priori* codes relative to the research questions is provided in Table 4.15. A copy of the Initial Template is contained in Appendix D.

Category	Code No	Code Description	Relative research question
Strategic objectives	1	Organisational strategic objectives	1
Client complexity	2	Levels of strategy	1
Alignment mechanisms	3	Governance mechanisms	2
	4	Procurement Strategies	2
Environmental influences	5	External Environment	3
	6	Client Leadership	3
TMO Strategy	7	TMO Behaviours	4
Project success	8	Project success criteria	5

Table 4.15: Summary of initial coding set

The initial coding set in Table 4.15 was systematically applied to further data and modified as necessary in order to develop a final template for the purpose of guiding the analysis. Development of a single, final template enabled the researcher to identify both emerging themes and consistent themes between cases. This supported the within-case analysis in Chapter 5, and cross-case analysis in Chapter 6.

Development of the final template involved a manual review of transcripts from the semi-structured interviews and secondary data collected from each case and the support of computer based coding, as discussed in Section 4.5.1. Minutes from the monthly progress meetings were particularly beneficial in gaining a holistic overview of each case study. Using the initial template, data emerging from the transcripts and documentation collected over stages B and C of the case-study protocol, were thoroughly analysed and applied to appropriate *a priori* codes. Parallel coding of segments of texts was also applied whereby the same segment of text was classified within different codes at the same level (King, 1998). It was important that the initial coding set was not treated as prescriptive, and data was not forced to fit the initial coding set (Bazeley, 2013), rather *a posteriori* themes emerged from the early data sets. The iterative process enabled additional codes to be added as themes evolved during the analysis. Also, early and redundant codes were removed or redefined during the analysis process. It was only after a number of iterations and applying data from all four cases that the template was finalised. A copy of the Final Template is contained in Appendix E.

4.5.3 Data display and conclusions

The remaining components of data analysis involve presenting the interpreted data and displaying the analysed evidence, from which conclusions and verifications are drawn. Within Miles and Huberman's (1994) concurrent flow of activity, a display refers to *"a*

visual format that presents information systematically, so the user can draw valid conclusions and take needed action" (Miles and Huberman, 1994: 91). Whereas, the final template developed in Section 4.5.4 displays codes *a priori* and *a posteriori*, there remains a requirement to present the researchers interpretation of the data (King, 1998).

Coffey and Atkinson (1996) contend that, although, the use of codes and identification of themes are a critical part of the qualitative process, it is not an end in itself. As argued by Bazeley (2013), the description of thematic codes and categories identified in the data provides a useful starting point in developing a report of findings from the study. However, effective analysis requires using data to build a comprehensive, contextualised and integrated understanding of the findings, with an argument drawn from across the data that establishes the conclusions drawn.

Within this research, conclusions were drawn from within-case and cross-case analysis, following Eisenhardt's (1989b) process of theory building from case study research, as presented in Section 4.3.1. Reporting the findings of each case individually enables deeper understanding of the perspectives of individual participants, and helps ensure that the discussion of themes does not become abstract from participants accounts of their experience (King, 1998). Ayres *et al.* (2003) also argue that analyse of individual cases enables the researcher to understand those aspects of experience that occur not as individual *"units of meaning"*, but as part of the pattern formed by the *"confluence"* of meanings within individual accounts (Ayres et al., 2003: 873). Individual case analysis, therefore, enabled conclusions drawn from within the boundaries of a single case to be compared and with other cases in the study and synthesized to draw final conclusions (Miles and Huberman, 1994).

Detailed descriptions of each case study were informed through the process of template analyse, discussed in Section 4.5.2. Building on the initial template, a thematic matrix for each case study was developed in conjunction with the final template. The thematic matrices, contained in Appendix F, isolate the critical incidents and unique themes. These are further explored within the discussion of each case study, with conclusions drawn to answer each research question. A display of each TMO structure also provides a holistic overview of each case and the relationships between individual participants to the study. Furthermore, a casual diagram developed from the case study

findings illustrates the influential relationship between themes to support the conclusion of each case study.

In order to address the aims and objectives of the research, the final stage of analysis included synthesis of themes and findings from each case study. Comparison of *a priori* and *a posteriori* codes emerging from data set allowed for themes emerging from the research to be explored in relation to the extant literature. At the same time, comparisons of the thematic matrices enabled parallels and divergences across the cases to be critically discussed. Using two, concurrent approaches to inform the aims and objectives, supported the verification of the findings, and led to more robust conclusions discussed in Chapters 6 and 7.

4.6 Research Ethics

For Berg (2001) scientists conducting social research have a greater ethical obligation to their study population than, perhaps, other discipline areas. The reason is that social science examines the social behaviours and personal perceptions of humans.

> *"From such excursions into private social lives, various policies, practices, and even laws may result. Thus, researchers must ensure the rights, privacy, and welfare of the people and communities that form the focus of their studies"* (Berg, 2001: 39)

Miles and Huberman (1994: 288) also advise that as qualitative researchers, we must also consider the implication of our actions in relation to the people whose lives we are studying, to our colleagues, and to those who sponsor our work.

The research within this thesis was conducted in accordance with the research ethical guidelines of Heriot Watt University, which is monitored by the University Ethics Committee established to guide schools, monitor procedures and ensure ethical issues are being considered (HWU, 2010). Besides, the ethics policy of the university, varied scholars has also outlined basic principles of ethical research. Each area, relevant to this study is considered and discussed in the following sections.

4.6.1 Harm to participants

Research that has the potential to cause harm was the primary ethical concern within the a number of discourses on research ethics (Flick, 2009; Diener and Crandall, 1978).

These include physical harm, harm to participants development or self esteem, and stress or harm to career prospects or future employment (Bryman and Bell, 2007).

The collection of data did not present a risk of physical harm to either the researcher or participants. Psychological harm was avoided through the anonymity of participants and cases. This also mitigated any business risk to firms participating in the study. Interview questions were designed to be sufficiently probing, without being contentious or challenging the ethics and values of respondents. As stated in the case study protocol in Section 4.4.3, a copy of the questions were sent to the participant prior to the interview, in order to allow preparation of answers, but also, to ensure that the participant was comfortable with the questions being asked, and to provide the opportunity to request further clarification before the meeting.

4.6.2 Informed Consent

The principle of informed consent means that prospective research participants are given as much information as might be needed to make an informed choice about whether or not to participate in the study (Bryman and Bell, 2007), and that individuals fully understand the consequences of participation (Flick, 2009).

Using snowball sampling, as discussed in Section 4.4.6, prospective participants were sent an introductory e-mail by the researcher, respectfully requesting their participation in the study. The introductory e-mail clearly stated the purpose of the study, the reason for the interview, the length of time the interview was expected to take, and the name, title, institution and contact details of the researcher. The e-mail also assured participants that, in accordance with the ethical guidelines of the university, the case and all participants would remain anonymous. Further information pertaining to the study was supplied on requested.

Prior to the start of each interview, the researcher explained the research process and confirmed the ethical guidelines of the university. Permission was sought from the participant prior to recording, and the participant was assured that the recording and transcript would only be used for the purpose of the study.

4.1.1 Maintenance of privacy

Within this study, the maintenance of privacy relates to the anonymity of participants and firms contributing to the research. Being anonymous in a research context means that only the principle investigator can match the results of a study with the participant associated with those results (Flick, 2009)

Whereas, every endeavour was made to ensure anonymity of the participants, as previously discussed, there was a concern that it would difficult to guarantee anonymity of the cases. This is because of the high profile nature of the cases in this study and some of the characteristics that are unique to specific construction projects. Participants were made aware of this concern prior to the interviews taking place. Within Chapter 5, all direct references to each case have been disguised, as have the location of each construction project.

4.6.3 Confidentiality

To ensure anonymity of participants and maintain confidentiality, data was stored securely on a password-protected computer and backed-up on password-protected cloud storage. This included transcripts from interviews, digital recordings, the case-study register and reports received from participants. However, as the case studies involved public sector projects, a large majority of the secondary data was already in the public domain. Despite this, respect for confidentiality was maintained throughout the case study reporting process.

4.7 Conclusion to Chapter

This chapter presented a detailed description and rationale of the methods used in this study to realise the aims and of objectives of the research. Applying case study methodology within the intrepretivist paradigm allows for in-depth understanding of the multiple perceptions within a TMO. To date, perceptions of strategic alignment and project success within the context of a TMO has not been captured across multiple case studies.

The difficulty with case study design is the lack of consistent guiding principles within the literature (Meyer, 2001). This study has applied practices from both Eisenhardt's (1989b) grounded theory approach and Yin's (2014) post-positivist approach, to developed a robust design process. Despite this, limitations in the data collection and

investigator triangulation is accepted, where it is recommended that multiple investigators collect and interpret the data (Eisenhardt, 1989b; Denzin, 1978). King (1998) also suggests that the initial template used in template analysis, be developed with two or more advisors, with knowledge of the research. However, as this thesis is for award of PhD, it was deemed appropriate that a single investigator conducted the research.

Ridged processes were implemented to ensure reliability. These include a case study protocol as guide for all interviews, data source logs for each case study, and the use of a final template and thematic matrices for individual cases to support analysis and conclusions. The evidence for each case study, collected from the methods discussed in this chapter are presented in Chapter 5 and synthesised in Chapter 6 to draw the final conclusions of the research.

CHAPTER 5
FINDINGS: WITHIN-CASE ANALYSIS

5.1 Introduction to chapter

This chapter is the first of two reporting the findings from the collection of data described in Chapter 4. Within this chapter, the empirical findings and analysis from each case study is reported, the following chapter syntheses the individual case study findings, in order to draw conclusions from the research. Evidence used to support the findings and analysis of individual cases are recorded in the data source logs, contained in Appendix C. The structure of the chapter is illustrated in Figure 5.1 and described in Section 5.1.1.

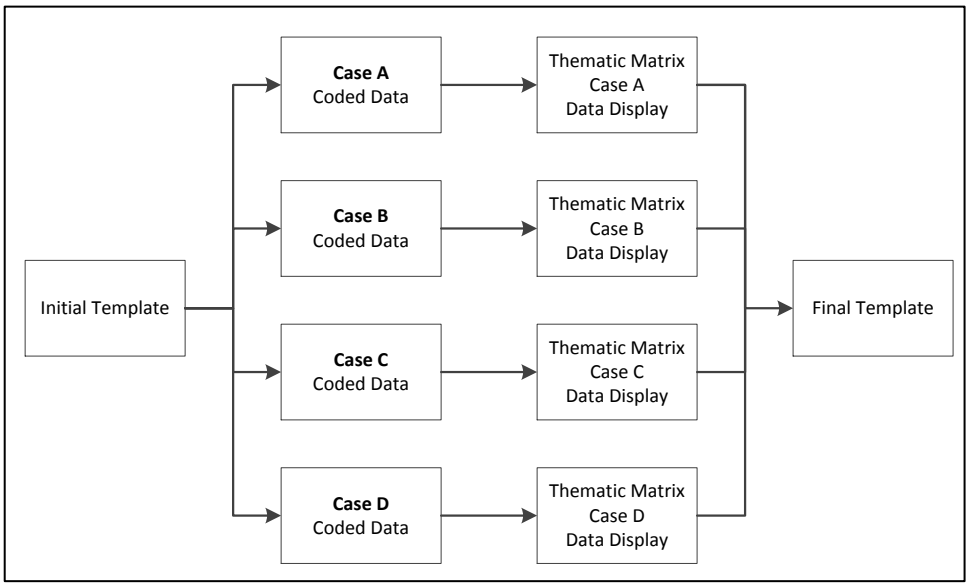

Figure 5.1: Within-case analyses chapter structure

As discussed in Section 4.5.2 of the methodology chapter, *a priori* themes were developed from the literature to create an initial template. Following a process of coding and analysis a final template, formed from all cases, and a thematic matrix from each case study was produced to report the findings and conclusions in this Chapter.

Case	Organisation Type	Project	Section
A	Higher Education	New Student Residence	5.2
B	Local Authority	New 4 lane carriageway	5.3
C	Environmental Authority	New Office and Laboratory facility	5.5
D	Heritage & Conservation Agency	New tourist visitor centre	5.4

Table 5.1: Case studies informing the research

The four case studies comprising the research are introduced in Table 4.8 of the previous chapter and summarised in Table 5.1, identifying the relevant section of each case study report.

Description of Section	Relative research question
• A general background and holistic overview of the construction project informing the case study with a brief summary of key events	
• A description of the structure of the TMO formed by the sponsoring organisation to implement the construction project.	Q2
• A discussion of the client strategic objectives being pursued through implementation of the construction project	Q1
• A discussion of the varied TMO member's strategic objectives to be realised through participation in the project.	Q1
• An examination of the mechanisms implemented to maintain alignment of client strategic objectives	Q2
• A discussion of internal and external environmental factors that influenced the realisation of strategic objectives	Q3
• An examination of project strategy developed by TMO actors to deliver the construction project	Q4
• A discussion of the varied stakeholder perceptions of project success	Q5
• A summary of findings for each case and answers to questions raised in Chapter 3.	

Table 5.2: Structure of each case study report

To support the replication logic of the research, as discussed in Section 4.4.3, the findings of each case study is presented using a consistent approach, as shown in Table 5.2. Each section is discussed to address the research question. A thematic matrix identifying the themes evolving from each individual case study, and the Final Template, is attached in Appendix E.

5.2 Case A – New Student Residence

Case study A involves the construction of a new student residence built on an existing suburban university campus, commissioned by a university within the higher education sector. A holistic overview of the construction project is provided in the following section, with discussions to answer the research questions, as shown in Table 5.2.

5.2.1 Background to the case

The new student residence formed part of an infrastructure programme to replace existing student accommodation was considered *"…no longer fit for purpose and carrying an increasing risk of service failure as well as being materially below the standard that we [the University] would wish to be represented as…"* (A-PMc-0210-report). The conclusion of inspections in 2009 found that the existing accommodation facility would not comply with the new guidelines for Licencing in Houses in Multiple Occupation (HMO) regulations (2010). An appraisal of the buildings, by the university Estates Department, subsequently led to the recommendation that refurbishment of the existing student residencies was not a commercially viable option to meet the new guidelines. Following submission of the Residences Business Case (A-PMc-0210-report), the university agreed to erect a modern residency block that comprised of 273 bedrooms, kitchens and shared social areas. A time-ordered display of the key events are summarised in Table 5.3 and discussed within the case study.

2009	2010	2011	2012
• July. PMC appointed	• February. Business case approved by PME • March. Project approved by Court • October. Advertised for tender	• January. MC appointed • February. Construction commenced on site	• 7th September. Practical completion and handover • 8th September. Students take occupancy

Table 5.3: Case A: time-ordered display of key events

A project management consultant (PMC) was appointed in July 2009 to provide design and project management services for the new residencies. Following the process of design and application for statutory approvals, the project was advertised for tender on 11th October 2010. The main contractor (MC) for was formally appointed on 27th January 2011, with construction commencing one month later for a scheduled completion date of 29th June 2012 (A-CS-0710-schedule). However, due to a series of delays, the building was not practically complete until 7th September 2012. Student occupation of the new residences began on 8th September for a semester start date of 10th September 2012.

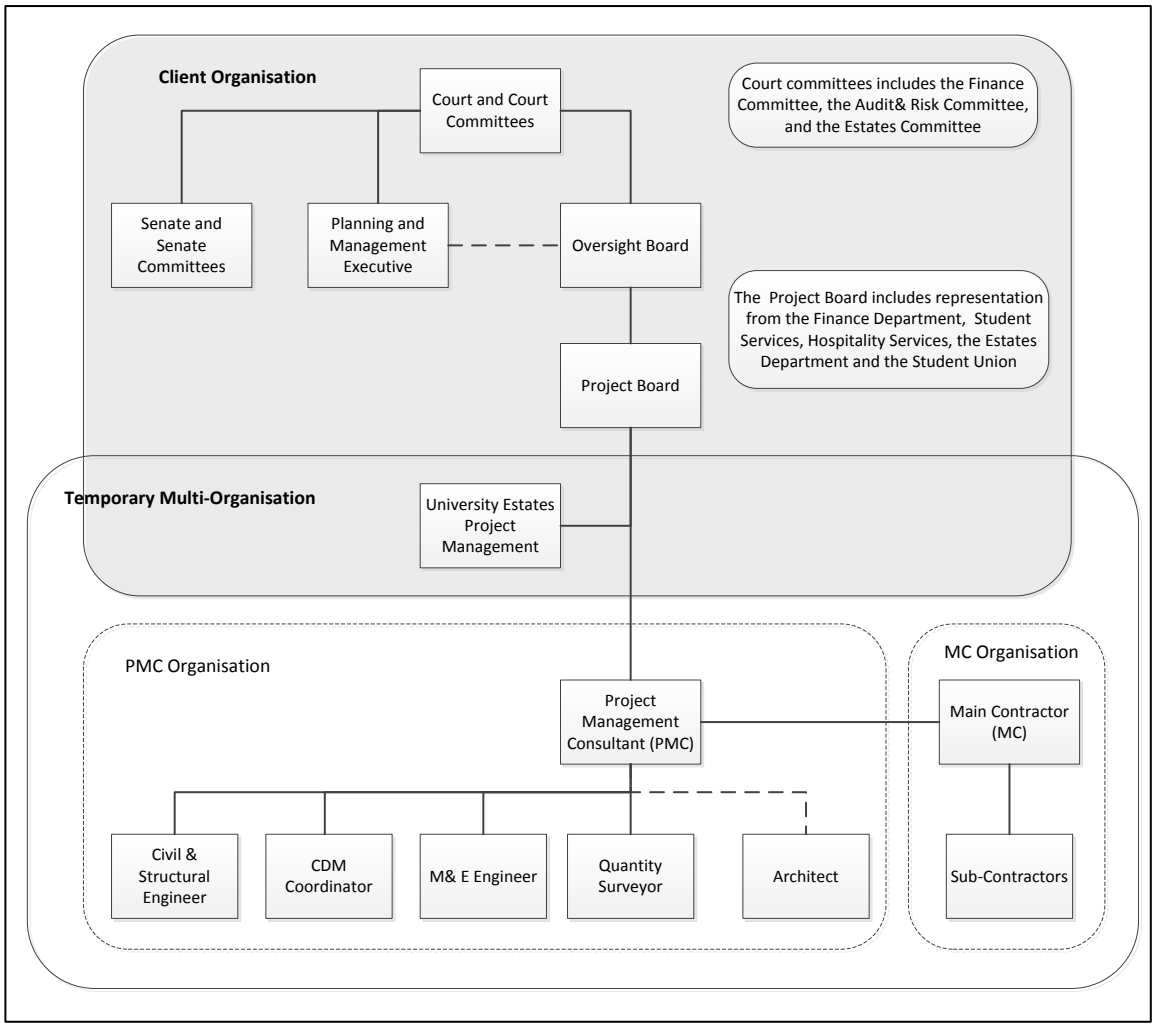

Figure 5.2: Case study A - TMO Structure

The structure of the TMO created to realise client strategic objectives is illustrated in Figure 5.2. As shown, the TMO consisted of three member organisations. These are identified as the Client Organisation (the university), the PMC as the consulting organisation and the main contractor as the MC organisation. Within this case study, sub-contractors are considered to be part of the main contracting organisation.

Contractual arrangements and governance process are discussed in Section 5.2.5 and 5.2.6 respectively.

5.2.2 Client organisation's strategic objectives

The strategic objectives to be achieved through implementation of the project as reported in the Residences Business Case (A-PMc-0210-report) to justify expenditure on the project were as follows:

1. To provide a long term solution to rapidly deteriorating student residences
2. To address safety risks and concerns relating to non-compliance with UK Houses in Multiple Occupation (HMO) regulations
3. To provide more attractive campus accommodation for students to support the university strategy for growth.
4. To address marketing and sales issues faced by the conference office and increase the opportunities for growth to support the university's financial position.
5. To make a major contribution to implementing the university Estate's strategic plan in reducing the maintenance backlog

As explained by Director of Campus Services, the primary objective of the university was the provision of student accommodation that was considered to be of an acceptable standard:

> *"... I think, undoubtedly for the university is the fact that we make a promise to new and first year students that we will make sure they have accommodation. I think it's got the added benefit that it actually stacks up commercially, but the primary motivation for the university is, or certainly has not been because there's money to be made in this. They do it because they have made a very public statement that first year students will be provided with accommodation"* (A-MD-031214-intvw)

Failure to provide appropriate accommodation for first year and international students would have had an impact on the reputation of the university, which is dependant on its duty of care for students. It was, therefore, critical that the residencies were complete as advertised, for students to take occupation at the start of the new academic year.

5.2.3 Business level strategies

The client strategic objectives, set the executive level of the university, were implemented at the business level through the Department of Student Services, the

Department of Hospitality and Catering, and the Department of Estates. The interrelated strategies are outlined as follows.

5.2.3.1 Department of Student Services strategy

The Director of Student Services reported that the existing accommodation had deteriorated through age and consequently suffered from poor student feedback. *"…the students didn't like living there and the quality was really poor* (A-CJ-280314-intvw). Not only did this impact on the reputational risk of the university, but also on the university strategy for growth. *"…unless we had high quality accommodation, or good quality accommodation then the students won't come"* (A-CJ-280314-intvw). It was perceived that provision of student accommodation that was of a higher quality than standard university accommodation, would provide the university with *"a competitive edge"* (A-DW-170315b-intvw) and *"enhance its reputation in the market"* (A-MMc-291014-intvw). This was viewed as being of particular importance to the international market where universities competed on the offering of a *"composite package of learning, welfare and accommodation"* (A-DW-170315b-intvw).

5.2.3.2 Department of Hospitality Services strategy

It was also suggested that by increasing the quality of student accommodation the University could enhance their financial position by charging a "*premium rent"* for the rooms, thus, supporting the university's financial position (A-TD-240314-intvw). An initial strategic option to generate revenue from the residences was to offer conference facilities and accommodation to non-students. This would address the marketing and sales issues faced by the conference office, as highlighted in the Residences Business Case (A-PMc-0210-report). This was pursued through specification of larger rooms and auxiliary accommodation. However, the strategy for conference accommodation was later abandoned as the additional space required would reduce the capacity of rentable rooms and significantly increases the unit cost from "*…£30,000 to, at least, £50,000 per bedroom* " (A-MC-190314-intvw).

5.2.3.3 Department of Estates strategy

A key objective of the Department of Estate's strategic plan was to develop a sustainable and low maintenance facility. This was pursued through a process of *"life cycle costing"* that involved the use of materials and fittings that were perceived to be of an acceptable level of quality.

> *"… as opposed to a low cost budget delivered quickly that could be used for 10-12 years and then knock it down and start again… these buildings will be there for a long time"* (A-BG-240314a-intvw)

Through a process of nominating suppliers for materials, fixtures and fittings, the Department of Estates could manage the supply chain with the objective of reducing the long-term maintenance costs of the new facility. It was considered that adherence to a strict *"Bible"* of nominated suppliers increased costs, as the option for competitive bidding among suppliers was removed (A-PW-071014-intvw).

5.2.4 TMO strategic objectives

A significant factor influencing the strategic objectives of TMO member organisations was the UK financial crises of 2008-2013, which witnessed a dramatic decline in the construction industry (CIC, 2009). During the crisis, student residencies emerged as one of the few growth markets. As a result of the increasingly competitive employment market, universities saw a sudden growth in student applications (UCAS, 2011), which led to an imbalance occurring within the student property market between the supply of accommodation and the demand for bed spaces (KnightFrank, 2011). Consequently, the Higher Education sector was perceived as an attractive market for consultants and contractors.

Therefore, besides the financial benefit of pursuing the residency project, both, the PMC and the MC identified potential market opportunities through membership of the TMO. Through alignment with the university strategy for delivery of a *" bespoke residence that was a higher quality than the normal market for an end user client or an owner-occupier*" (A-BG-240314a-intvw) the PMC could enhance their project portfolio of the PMC and expand business in the education sector.

Similarly, membership of the TMO enabled market entry into the student residence sector for the MC.

> *"...the education market was somewhere we were looking to develop an offering in and [The University] are by any measure a blue chip client in that market"* (A-MMc-291014-intvw)

By achieving client satisfaction the MC would be able to apply for further work with the university, as part of the wider regeneration programme and apply for a favourable reference to support applications for other contracts within the higher education sector.

5.2.5 Procurement process

The services of the PMC were employed under the Office of Government and Commerce (OGC) Project Management & Full Design Team Services Framework RM457. This was considered a *"faster route to market"* than advertising through the Official Journal of European Union (OJEU) and the time required for the preceding prequalification process (A-BG-131014b-intvw). Under the conditions of the framework, the PMC would provide all design services, including civil and structural engineering, mechanical engineering (M&E), quantity surveying (QS), Construction Design and Management coordination (CDM) and architectural design. All consultants were existing employees of the PMC, apart from the architect whose services were contracted to the PMC from an independent architectural practice.

The decision was made to manage the contractual arrangements of the construction under the traditional procurement strategy. This was to guarantee *"control over the end product"* through nominated suppliers, in accordance with the Department of Estates strategic plan for reduction of building maintenance (A-MC-190314-intvw).

The decision of procurement strategy was made despite the recommendation of the PMC organisation to pursue a design and build procurement method, which was considered more suitable for buildings of modular construction, such student residencies, and would transfer the risk of cost over runs to a design and build contractor (A-GC-231214-intvw). All respondents later considered the decision to pursue a traditional procurement strategy to be the main failing of the project.

> *"It's the main reason why it got all cocked up without… it's 90% of the cause...it was the wrong choice of procurement route"* (A-DW-170315b-intvw)

Another perceived failing in the choice of procurement was the inexperience of the client body to efficiently manage the design team responsible for managing the procurement process.

> *" So, you've got a group who are just not familiar with running projects of that scale and if you take responsibility for the design team you need to know what you're doing"* (A-MD-031214-intvw)

As explained in Section 3.6.2, to ensure cost certainty for the client, design information needs to be complete at the time of going out for tender, otherwise the client runs the risk of additional costs. As a consequence of the economic decline in construction industry, contractors were forced to submit low and often unrealistic bids "*with stupid*

profit levels" (A-MD-031214-intvw) to secure contracts. With losses being recouped through claims for additional works.

> *"… the contractor's dependent on the design team to make sure that they make as many cock ups as possible so they can drive a bus through it and make money"* (A-DW-170315b-intvw)

Referred to as *"suicidal pricing"* (A-MC-190314-intvw), the university accepted a tender application from the MC at 10% below budget. Incomplete design information and post-tender tender design changes left the university exposed to additional costs by the contractor, for variations from the original tender documents and charges for additional items.

5.2.6 Governance structure

The university established two new boards for the purpose of governance, as shown in Figure 5.2. A project board was created to provide direction and guidance for the TMO. Representation included the Director of Finance, the Director of Estates, Student Services, Hospitality Services and the Student Union. An oversight board was created to report directly to Court, as the highest governing body of the university, and included representation from the Finance Committee, the Audit and Risk Committee, the Estates Committee and representation from PME (A-PMc-0210-report).

The new governance structure was incorporated within the established governance framework of the university. Within the governance arrangements, design, budget and deadlines of the project required formal approval by the Court of the University before progressing. However, as Court only met four times per year, the key milestones within the project were aligned to the pre-arranged dates of Court meetings.

> *"The university governance structures imposed a timetable that didn't fit with the project…if we missed the Court deadline* [for submission of paperwork], *we wouldn't be able to start the next stage of the project. We rushed too much…we rushed the proposal and it wasn't complete and that proved to be the biggest mistake we made, because we hadn't fully costed the building and delivery of the facilities within them*" (A-CJ-280314-intvw)

As a consequence of working towards the Court imposed deadlines, and seeking to meet the deadline of completion before the start of term, design information was not complete at the time of advertising for tender of main contractors.

Concern was also expressed over the experience of newly established project board to effectively guide and direct the project to achieve the university strategic aspirations, as previously highlighted in Section 5.2.5.

> *"The main problem was that there was hardly anybody on the project board who had ever been involved in delivering new residences and so there was a lack of knowledge and a naivety about how we're going to build this really high specification building … There was naivety, lack of expertise and a lack of honesty about delivering on time and we tried to deliver too fast, to a time scale that wasn't achievable"* (A-CJ-280314-intvw)

A project manager (PM) for the Department of Estates was later appointed act as client representative and the main interface between the Project Board and TMO (A-HW-0311-report).

5.2.7 Client behaviour

The client complexity within the project board resulted in competing and often conflicting directive being issued to TMO actors. There was also evidence of disagreement between board members, which caused difficulties for members of the TMO.

> *"...in the early stages there were regular meetings where we would come and present to the university. That was a very tortuous drawn-out process and there was never an agreement between those bodies. So, how would you ever know if you were doing the right thing or the wrong thing because they would always be pulling in different directions? ... and they would have conversations, 'Don't listen to them. Listen to me'…That made it very difficult"* (A-PW-071014-intvw)

There was frustration at the lack of leadership and direction from the university. The initial lack of a *"single decision-maker*" (A-PW-071014-intvw) and the uncertainty of who, in the university, had the authority to make the final decision had an impact on the progress of the project.

> *"That uncertainty ran through the entire university team. When we'd gone to speak to them … that uncertainty about who is in charge percolated down through the entire team. It eventually came to us and at times you almost felt that you were caught in the middle. It was a bizarre situation for a while"* (A-MMc-291014-intvw)

Although, the appointment of a client project management, to provide direction to the TMO, eased the difficulties caused by the client complexity, the leadership style of the appointed PM to recover delays on the project, did affect the motivation of the TMO.

> *"... the team broke down because of the pressure applied by me…I was simply putting them under pressure day to day, which is what a project manager is supposed to do because they have to deliver…" (A-DW-170315b-intvw)*

As a consequence TMO actors also reported of *"some very unreasonable behaviour on the part of the client"* (A-PW-071014-intvw) and were of the opinion that the university was "*very poor at relationships with all the team"* (A-MMc-291014-intvw). As a consequence of the client behaviours, meetings between the client and TMO became *'fractious rather than conversational'* with discussions between actors becoming *'significantly heated'* (A-MMc-291014-intvw) for the duration of the project. As observed by the MC:

> *"… it just didn't promote team working. If anything, it promoted working in silos and looking after yourself…It's about a team working well and working well together, and the client has a lead role in which to claim that. And if the behaviours for the client are such that it actively discourages a team from working together, that's a recipe for disaster"* (A-MMc-291014-intvw)

The evidence finds that the leadership behaviours led to a lack of trust in the client from members of the TMO, and also developed into a lack of trust in the PMC from the client, in which the professional integrity of the client was being questioned (A-GC-231214-intvw). Negative behaviours also had an impact on the internal relationships within the TMO, as discussed in Section 5.2.9.

5.2.8 Supply chain

The most threatening external influence to realisation of strategic objectives was the uncertainty in the MC's supply chain. The accepted tender price offered to the client was partially based on estimates received by potential sub-contractors for specific elements of the work. The MC was, therefore, dependant on the securing the services of specific sub-contractors at, either, the estimated price or lower, depending on the cost submitted (A-MC-190314-intvw). However, as observed by the PM:

> *"…the market had changed. Basically what happened was prices on materials, in particular, had levelled off during the recession period and just as they started to pick up again actual material costs went through the roof. Then labour costs went up as well so all in all it's a perfect storm for being a contractor"* (A-DW-170315b-intvw)

A consequence of the turbulent market conditions was that the MC was unable to secure sub-contractors at the previous estimated cost. They, therefore, needed to return to the market in order to seek availability of alternative sub-contractors that would provide services at the lower costs. The time taken to secure alternative sub-contractors had an inevitable impact on the progress of the project.

A second difficulty in the supply chain was the availability of bricklayers for the traditional masonry and pre-cast concrete construction of the new residencies.

> *"They need the work in front of them to have continuity. What happened, then, when we then started hitting all these issues with design and all that, that affected continuity for the bricklayers"* (A-MMc-291014-intvw)

As a result of adverse weather conditions and delays in design information, there were gaps in the construction of the masonry. Consequently, the MC was *"losing bricklayers from the job left, right and centre"* (A-MMc-291014-intvw), as they moved on to other projects, in order to ensure continuity of employment and income. Thus, causing further delays in in achieving the original deadline.

5.2.9 TMO strategy

The project strategy of the TMO was influenced by a number of internal and external environmental factors. This includes governance mechanisms, client complexity, client behaviours, and the varied strategic objectives being pursued through the project. The strategic behaviour of the TMO in delivering the project is explored under the themes of *time, team, task* and *transition*.

5.2.9.1 Time

All TMO actors recognised the need to complete the project before the start of the new term and fully understood the reputational risk to the university in not achieving the deadline.

> *"… the university had already marketed the accommodation and the damage that would have been done from the reputational point of view to the university. We were fully aware of that and we wanted to make sure we got the students in on time"* (A-MMc-291014-intvw)

Actors were aware that if the residency was not complete in time for the students arriving, there would be a requirement to arrange alternative accommodation for students, and the new residences would "*basically, be empty for a year"* (A-MD-031214-intvw). Despite this, the residencies were delivered two months later than the original deadline and 15% over budget at completion.

In the latter stages of the project, the strategic focus of the TMO was to meet the deadline of completion prior to students arriving for the start of the new term. This was at the expense of other strategic priorities. *"…come hell or high water, the students had*

to be in!" (A-MMc-291014-intvw). However, as a result of increased efforts, the residences were only *'practically'* complete to allow occupancy of the students.

> *"Delivery to time was very difficult and very problematic and we delivered it five minutes before the students arrived. Five minutes! The paint was still wet on the walls when the students arrived with their parents, luggage and everything"* (A-DL-270314-intvw)

Albeit, in the rush to make the residences accessible there were a number of quality issues and unfinished work that needed to be addressed after the students had taken occupation (A-GC-231214-intvw).

5.2.9.2 Team

Evidence shows that that the pressures to complete the student residencies in time for the student arriving influenced the behaviour of actors and increased tensions within the TMO.

> *"It obviously increased pressure. If you're trying to push people to complete by a date that they perceive as tight, there is obviously a knock-on impact on relationships and stress levels" (A-GC-231214-intvw)*

As a result of the stress in meeting the deadline, together with the additional pressures imposed by the client, behaviours between actors became defensive, with reports of *"silos"* emerging between TMO members (A-MC-190314-intvw). There were also reports of communication breakdowns and a lack of integration from actors within the same PMC organisation.

> *"You know they would all travel down to the same meetings from the same office but they would travel in separate cars and all take different routes"* (A-PW-071014-intvw)

Consequently, a culture of blame developed within the TMO, whereby the PMC was attributing slippages in the schedule to the difficulty the MC was having in securing sub-contractors. Conversely, the MC blamed the delays in construction on inaccurate and incomplete design information being issued by the PMC design team.

> *"…the contractor was trying to pick out items of errors in design …the designers who are saying "that's not ours, it's your fault" …both sides were defensive rather than proactive*" (A-MC-190314-intvw)

As a result of pressure on actors to complete the project, the TMO became fragmented, rather than integrated, resulting in a poor working environment.

There was also evidence that the remote location of TMO actors caused difficulties. Whereas, most of the PMC were based in the same office, the structural engineer was based in a regional office, two hundred and fifty miles from the site

> *"They had that slightly dismissive attitude…I don't think they really appreciated that what we thought we'd been asked to deliver... so there was a bit of conflict there"* (A-PW-071014-intvw).

As a result of the lack of integration between the structural engineer and the remaining members of the design team, the steelwork needed to be redesigned, causing further delays in the project and greater tensions between the TMO member organisations.

5.2.9.3 Task

The interpretation of the design requirements was also a cause tension for the architect in defending the alignment of the strategic directive to provide a high quality residency.

> *"We weren't asked to deliver a Premier Inn because we could have done that...for half the time and for half the cost, but that's not what we were asked to do, but I think that kind of got lost…so it became a bit of an issue"* (A-PW-071014-intvw)

Whereas, the traditional masonry construction and pre-cast construction aligned with the Department of Estates maintenance strategy, in terms of robustness and low maintenance, it was a slower form of construction (A-BG-131014b-intvw) and dependant on the availability of bricklayers, as previously discussed (A-MMc-291014-intvw).

The PM was critical also of the design, in that was too *"bespoke"* and lacked "*repetitive elements"*

> *"…which means that you've got no economies of scale. You've got no opportunity to find slack in the programme with repetitive detail and repetitive forms of construction"* (A-DW-170315b-intvw)

Despite the architect's perception of the client requirements to build a unique, high quality student residency, the evidence suggests that the remaining TMO actors were of the opinion that the design of facility was a factor in the difficulty of achieving the deadline.

5.2.9.4 Transition

As previously in Section 5.2.1, the new residences were originally scheduled for handover to the Department of Hospitality and Catering on 1st July 2011, in order to allow sufficient time for the necessary preparations required for student to take occupancy.

> *"When it became 8th September, with students arriving the following day, yes then we just thought "everything has gone to heck in a bucket, get on with it*" (A-TD-240314-intvw)

Because of the late delivery of the rooms, there was inadequate time for inspection and efficient transition between handover and occupancy. These resulted in complaints from the new student residents that items had not been completed adequately or were unfinished (A-GC-231214-intvw). There were also reports that, in the rush to fix the outstanding items, additional damage was caused to finishes by sub-contractors, thus damaging relations further (A-PMc-101214-intvw).

5.2.10 Project success

The first measure of project success across the majority of participants was on delivery of the project within schedule and within the allocated budget. It was generally accepted that *"it wasn't exactly on time, but the objectives to have the students in place for the term start in 2012 was achieved. The September intake target was met"* (A-BG-240314a-intvw). It was also conceded *"the budget aspirations weren't achieved"* (A-BG-240314a-intvw).

From the PMC and MC perspective, an important measure of project success was client satisfaction (A-MC-190314-intvw). Through client satisfaction, the MC would be able to apply for further work with the university (A-MMc-291014-intvw), and enable the PMC to enhance their portfolio in the Higher Education Sector (A-BG-240314a-intvw).

Besides the efficiencies in project delivery, the main measure of project success, from the client perspective, was the end-user satisfaction. Through positive student feedback, the university would maintain its reputation. Despite the delays and the initial complaints, the new facility was well received and the feedback from the students was *"positive"* (A-GC-231214-intvw).

> *"Personally… I think it's a great success, a lot of people have got caught up in thinking it wasn't because of the financial impact but, longer term, people will*

> *forget about that and think we have an amazing high quality building."* (A-TD-240314-intvw)

The Director of Hospitality and Catering also reported that from a financial perspective "*It sold out quickly, which was nice to know that people would happily pay for quality. So, on that grounds, yes it was a success"* (A-TD-240314-intvw).

Therefore, despite being unsuccessful in achieving the short-term success criteria, the project was successful in achieving the long-term success criteria for the client. However, as a result of the delays and cost overruns, the MC and PMC were not invited to participate in future work with the university.

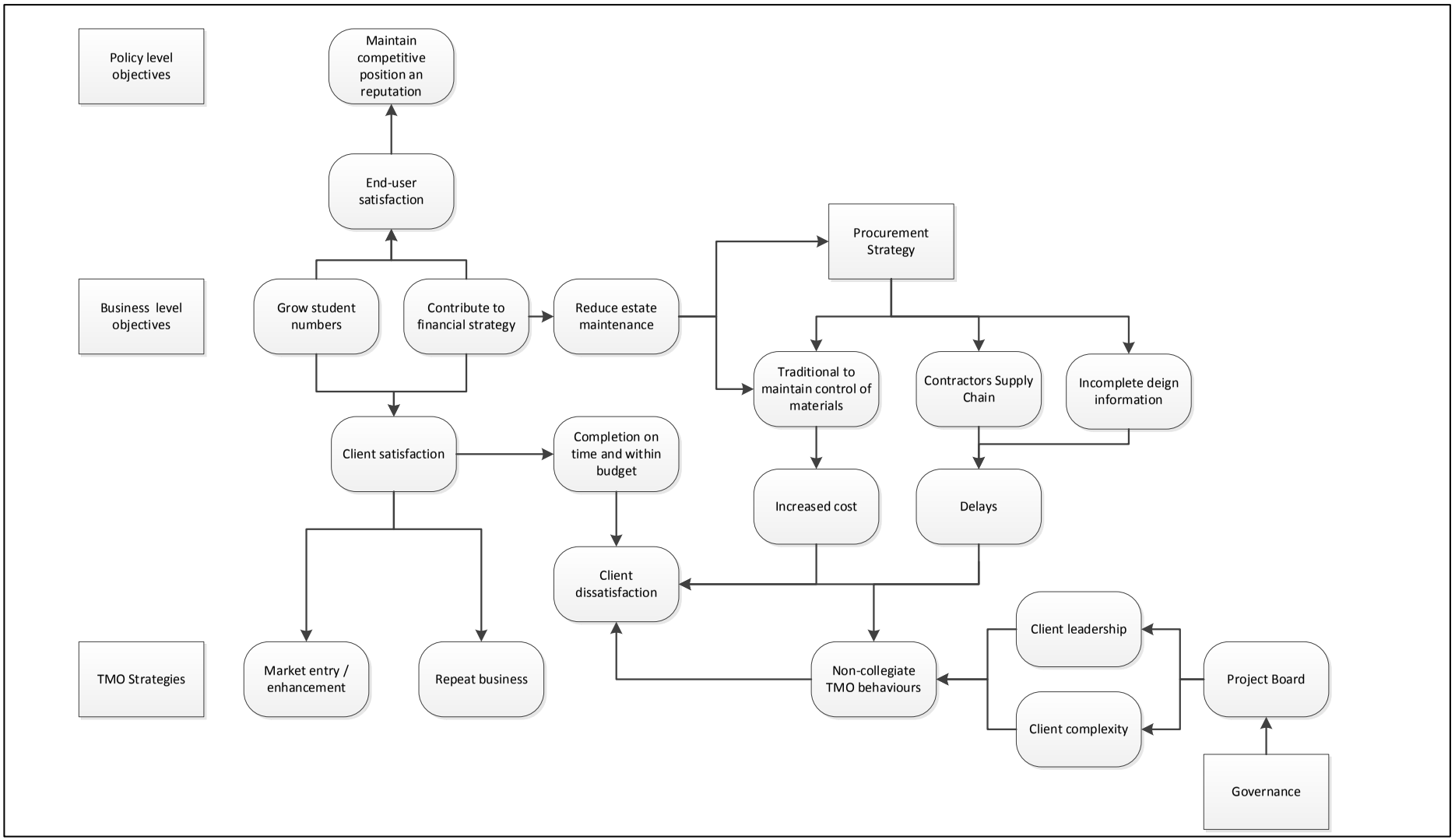

Figure 5.3: Causal network diagram Case Study

5.2.11 General findings from Case A

Report on the general findings of Case A are structured around the research questions discussed in Section 3.5. Findings are illustrated by a causal network diagram shown in Figure 5.3 that show the relationships between events and actions within the case study.

5.2.11.1 Organisational strategy

The policy level strategic objective of the client was to safeguard the reputation of the university and maintain its competitive position, which had been threatened by the deteriorating condition of existing residencies. Construction of high quality residences provided strategic opportunities at the business level to grow student numbers through the enhancement of the student experience; reduce the maintenance of the university estate through nomination of specified suppliers; and make contribution to the universities financial position through higher rents from the accommodation. There was evidence that client complexity has a negative effect on the project, with differing strategic objectives being communicated to the TMO. This was alleviated through the appointment of a project manager to act a single point of contact between the client and contracted parties.

As illustrated in Figure 5.3, through alignment with the client strategic objectives and participation in the PMC could gain entry into the Higher Education Sector, which was one of the few buoyant sectors at the height of the financial recession. Similarly, through delivery of a successful project the MC could seek further work with client as part of the universities infrastructure programme. However, as a result of the delays and disputes over claims, the relationship between the client and TMO organisations were poor. As a consequence, the strategic objectives of the PMC and MC were not achieved.

5.2.11.2 Mechanisms to maintain alignment

Findings suggest that formal mechanisms to ensure that the alignment of strategic objectives was maintained were not effective. The established governance structure within the university did not align with the schedule required to achieve the project objectives. Approvals of the tender application was required by the Court Committee of the university, which only met four times a year. In order to maintain the programme for the completion date, tender documents were, therefore, advertised with incomplete design information.

The traditional procurement strategy adopted by the university enabled the MC to submit an unrealistically low tender price and make claims for additional works that were not included in the tender documents. However, as a result of the financial crisis and incomplete design information, the MC was also unable to secure sub-contractors with the supply chain to carry out works at the previously estimated low cost. Findings also suggest that the structure of the TMO did not fit with procurement strategy. All consultants were employed by the PMC, and roles and authority were unclear.

5.2.11.3 TMO strategic behaviour

The delays in achieving the immovable deadline had a significant impact on the strategic behaviours of the TMO. This was also influenced by the client leadership behaviours towards realising the strategic objectives of the project. As a consequence of factors causing delays and additional pressures imposed by the client project management, undue stress and fragmentation within the TMO began to occur, with a loss of trust and a blame culture between TMO member organisations evolving. The evidence finds a lack of integration between TMO members, but also between actors within the same organisation.

The findings also suggest a strong task focus. This was particularly evident where team members were not co-located and with sub-contractors, who were only partially connected to the TMO. In general, the focus of actors was on the completion of the individual tasks that they would, individually, be measured on.

5.2.11.4 Project success

During the project and on completion, success of the project was measured on the short-term project management objective of completing the facility, within the allocated budget and in time for the students arriving. Quality of the complete facility was also a success criterion, but notably, this was raised by only a small number of participants. The MC and PMC were aware that their performances were measured on the time, cost and quality these criteria. It was through, client satisfaction and the successful delivery of the project objectives that the strategic objectives of the contracting organisations would be achieved.

At the client business level, success of the project was measured on end-user satisfaction. Through student satisfaction, the university would main its reputation, and support the strategy for growth through the provision of a more attractive campus. The Department of Hospitality and Catering also measured success on the ability to, comfortably, charge higher-level rental, thus contributing to the universities financial strategy. However, these measures of success could only be ascertained a period after completion of the project.

From a commercial perspective, the MC reported financial losses and significant management time dedicated to recouping costs that *"could have spent chasing other work and doing other work"* (A-DL-270314-intvw). As, neither, the MC nor PMC achieved their longer-term strategic objectives of attracting further business through participation in the project, the project was not considered successful for the TMO organisation.

5.3 Case B – New Four-lane Carriageway

Case study B involves the construction of the second phase of a four-lane carriageway, distributer road, routed through the east end of a major UK city, commissioned by the Local Authority of the City Council. A holistic overview of the design and construction phase is provided in the Section 5.3.1, with discussions to answer the research questions of the study.

5.3.1 Background to the case

The new carriageway formed part of a major regeneration strategy, which was originally developed in 1965 to connect new areas of the city that were being developed for the relocation of residents living in deprived neighborhoods. During that time, migration was needed to alleviate overcrowding and the deterioration of living conditions after the Second World War (Kirkpatrick, 1965). However, due to expenditure on the construction of motorway links to other towns in the country, and the typical five-year cycle of the serving local government, works on the new carriageway did not commence until 2010 (B-GO-0915-email).

The catalyst for investment of the new carriageway came in 2007 when the city won a bid to host a major, international athletics event (the Games) to be held in 2014 (B-LES-0911-report). As part of the application process, a commitment was made to invest £1.25 billion in preparation for the Games, which included the construction of the new carriageway. (B-GCG-0814-report). Due to the overall length of road, at 5.3km, it was planned that the complete carriageway would be constructed in three phases. The first phase, stretching 1.5km, was completed in April 2010. Construction of the second phase commenced in May 2010. This phase was the longest stretch of carriageway at 2.4km and included the incorporation of full-length cycle-ways, the widening of local footpaths and the construction of a relief tunnel for flood alleviation (B-AH-0713-doc). Construction of Phase 2 was complete on 26th April 2012, one week ahead of schedule. Approval for Phase 3 was granted in January 2016. A time-ordered display of key events for are summarised in Table 5.4.

2007	2009	2010	2012
• City wins bid to host major sporting event in 2014	• March. Phase 1 Construction commenced on site • April. Specimen design for Phase 2 • May. Advertised for tender under OJEU procedure • November. Tender Return	• January. Design approved by the City Council • February. Design and Build Contractor appointed • April. Completion of Phase 1 • May. Phase 2 Construction Commenced on site	• April 2012. Completion of Phase 2

Table 5.4: Case B: Summary of key events

On completion of Phase 1 in April 2009, the Local Authority technical team produced a specimen design for Phase 2, which formed part of the tender documentation (B-GO-200814-intvw). Following the formal process of advertisement in the Official Journal of the European Union (OJEU), as set out in the Directives 2004/18/EC of the European Parliament on the coordination of procedures for the award of public works contracts, a joint main contractor (JMC) was appointed in February 2010 to provide design and construction of the second phase of new carriageway.

Figure 5.4 illustrates of the structure of the TMO created to realise the client organisation's strategic objectives. The TMO consisted of three member organisations. These are identified as the client organisation (Local Authority), the Joint Main Contractor (JMC) and Design Engineers (DE). Within the case the JMC was formed as a joint venture between two contractors. For the purpose of the case study, these are identified as Joint Venture Contractor 1 (JVC1) and Joint Venture Contractor 2 (JVC2). Within the conditions of the design and build contract the DE was employed by the JMC to supply design services for the project.

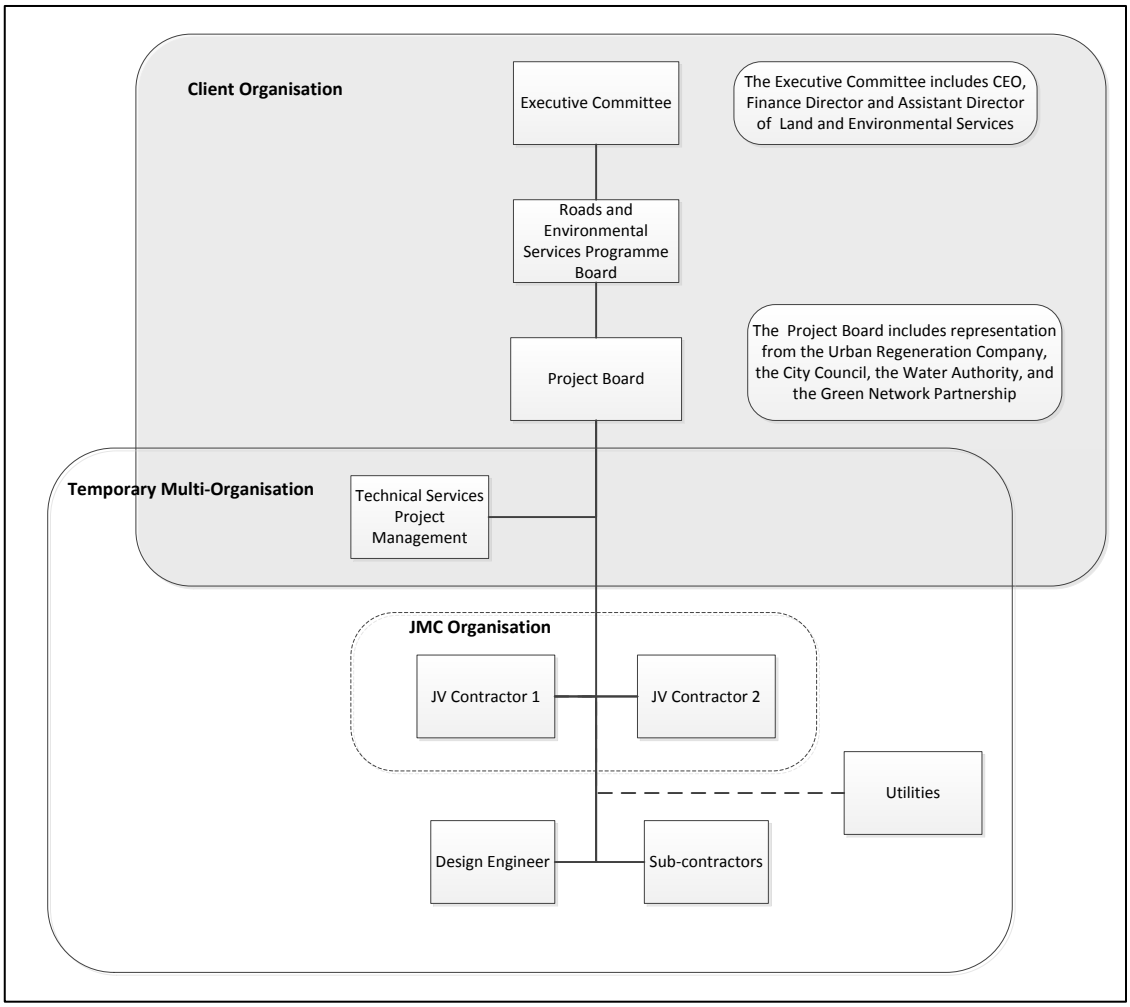

Figure 5.4: Case Study B - TMO Structure

5.3.2 Client organisation's strategic objectives

The primary strategic objective for construction of the new carriageway was to facilitate a major regeneration initiative in the east end area of the city. As stated in the Local Authority Business Plan (B-CGB-0608-report), the vision for regeneration was supported by three strategic objectives:

1. *'Sustainable place transformation'*, which focuses on the overall infrastructure and environment of the area. This involved improving the quality of the built and physical environment, and the provision of increased housing choices.
2. *'Increased economic activity'*, which focused on attracting employers to locate to the area, thus increasing employment opportunities for local residents.
3. *'Develop community capacity'*, which considers the long-term investment in into the community, through focus on education, health and increased community participation.

Construction of the new carriageway and associated works made contribution to all three strategic objectives. The strategy for sustainable transformation was supported through improvement of the physical infrastructure, which included construction of a relief tunnel for flood alleviation. Economic activity was stimulated through the attraction of businesses to the area and the subsequent increased opportunity for local employment.

> *"…so the purpose was to try and stimulate the local economy by encouraging local businesses to come in and set up and, therefore, the road would provide links to the adjacent motorway, to encourage businesses to set up on the route of the new scheme"* (B-AH-200814-intvw)

A growth in local business and higher employment opportunities would attract further residents to migrate to the area. Thus, supporting the strategy for community capacity by stemming the loss of the local population and investment.

The short-term strategic objective was to provide access to the sporting facilities that were either being built or upgraded for the purpose of hosting the Games. The project incorporated the provision of link roads to varied arenas and the Athletes Village, in addition to the improvement of existing roads along the route.

> *"…without that, the arena would have been pretty much landlocked so that drove the timescales because, as I say, that needed to be done before the games"* (B-AH-200814-intvw)

Due to the size and international nature of the athletic event, the date of the opening ceremony was determined within the original bid application to host the 2014 Games. To maintain the time-line for preparations for the Games, and maintain the international reputation of the city, it was essential that the carriageway was complete as scheduled.

5.3.3 TMO strategic objectives

Both JV contractors identified the strategic benefits of entering into a joint venture as a TMO member organisation. By combining the skill sets of each contractor they would, jointly, be in a stronger position to successfully tender for the project and deliver the project objectives. JVC1 perceived that by becoming the main contractor for construction of the carriageway would provide the organisation with the relevant experience to successfully tender for projects of a larger size than they would have normally been considered.

> *"So, it sort of helped to raise our game… we are now able to say that we've done a project of that sort of level. It helps being able to pre-qualify for other projects"* (B-LC-111214-intvw)

Both JV contractors also recognised the significant impact the Games would have on the city. International media coverage and publicity would raise the city's profile and the profile of projects associated with the Games. Through participation in the project, TMO member organisations would be able to support marketing initiatives and raise brand awareness across the region (B-IW-220914-intvw).

All TMO member organisations shared the same strategic objective of pursing future contracts with the local authority. Besides being considered a *"good employer"* (B-LC-111214-intvw), securing more local contracts was a key strategic objective for JVC1. At the time of the study, the employees were working on jobs across the country, but this was incurring additional costs in terms of accommodation, travel and the transportation of owned plant fleet. The Finance Director also expressed concern over the work-life balance of employees.

> *"So, what we're finding is more and more of our staff are having to stay away on a weekly and regular basis and that becomes quite difficult for people with families, so if we can get more local work it's better for us"* (B-LC-111214-intvw)

Similarly, participation in the project aligned with the DE strategy of establishing a local presence. As an international organisation, the design engineer had offices throughout Europe, each with multiple disciplines. However, as the main government transport offices were based within the city and *"Transport* [UK] *being one of our crown jewel clients"* (B-SR-010914-intvw), the DE recognised the strategic benefits of developing their transportation design capability locally.

5.3.4 Procurement processes

All respondents were in agreement that the design and build procurement strategy was the most suitable approach to manage the project. Within the contractual arrangements, the DE further developed Technical Services preliminary designs developed for detail design and construction. The main benefit to the client organisation was that risk was transferred from the local authority to the JMC.

> *"… should the design not fit in terms of the land availability or should there be problems with the design, it's not back on us, the employer*" (B-AH-200814-intvw)

The design and build approach also allowed for innovation and potential savings by the contractor (B-AH-200814-intvw). This was because the JMC had greater control of the design, and through a process of *"value engineering"*, the JMC would be able to provide additional environmental, cost and programme benefits (B-JW-230914-intvw). Not only was strategic alignment maintained through focus and innovative practices, but also under the conditions of the contract, any savings were shared between the client and the JMC.

5.3.5 Governance structure

Formal governance processes within the local authority were well established and an accepted part of the operating procedures of city council projects. The local authority established a project board for the purpose of governance. The project board maintained formal responsibility for direction of the project and TMO. Membership consisted of representation from stakeholder organisations involved in the regeneration initiative, and included the local authority, the local Water Authority, a Green Network Partnership created by central government to implement a programme of green space enhancements across cities, and an Urban Regeneration Company established from neighbouring local authorities to represent the community in the area with regards to regeneration, (B-GCC-0312-report).

Independent governance arrangements included inspection by an Operational Delivery Scrutiny Committee who has the responsibility to monitor the operational performance of all local authority services in relation to the policy objectives and performance targets (B-GCC-210915-doc).

5.3.6 Client behaviour

The local authority Technical Services Project Management team (TRPM) were based on site along with the JMC, DE and other sub-contractors. The local authority Resident Engineer was of the opinion that that by having a client presence during the works would ensure that the quality of workmanship was maintained (B-AH-200814-intvw).
There were some underlying conflicts over ownership of the design between the JMC and the client. The DE did felt that the TRPM were *"over protective"* of their preliminary design.

> *"…there was a little bit of, "It's ours," and not recognising then that the detail was going to be done by someone else so in … it's almost like, you know,*

> *"Having done a preliminary design, my concept was this but you want to do something else therefore you're wrong"…"* (B-SR-010914-intvw).

Under the contractual agreement, the DE was able to *"interpret"* the specification in the tender documents. In some parts, this differed as to what was originally intended by the client, although the final decision would fall with the JMC.

> *"That's where sometimes as a design and build team, the feeling you get from the Council is that they think they're running it as a standard contract where they're in control of making the decisions in quality, whereas that's not always the case. If you're design and build, you're taking that risk so it's then up to you to argue that case…"* (B-IW-220914-intvw)

Despite this, TRPM perceived relations within the TMO to be, generally, positive. There were some discrepancies over design and cost, but problems did not escalate.

> *"…there will always be tensions in the industry between the contractor and a client, but nothing unusual,"* (B-AH-200814-intvw).

It was reported that when issues were encountered, TRPM were *"…quite happy to come and talk and try and help find acceptable solution"* (B-SR-010914-intvw), thereby, enabling a productive working environment to evolve.

5.3.7 Supply Chain

As with Case Study A, the biggest threat to the realisation of strategic objectives was the contractors supply chain, in particular, the utilities organisations providing water, electrical, gas and telecoms. Significantly, these external organisations do not operate within the boundaries of a single TMO, rather they operate across multiple projects. The JV contractors were frustrated that, as most utility organisations are single suppliers, they are able to work to unique timeframes and deadlines that did not align with deadlines for the project.

> *"…they have no contractual responsibility to install that cable when you want it and be out by the time you need them out. So, you know, two months later you're still waiting and you can't complete that section of road until they've come in and done their works and you're left kind of hanging about."* (B-JW-230914-intvw)

Due to delays in the completion of utilities works, other sub-contractors could not complete dependant tasks. This resulted in slippage of the project schedule and further frustration for all TMO actors.

5.3.8 TMO Strategy

The project strategy of the TMO was influenced by a number of environmental factors. These included the governance mechanisms, client behaviours, external factors and the varied strategic objectives being pursued through the project. The strategic behaviour of the TMO in delivering the project is explored under the themes of *time*, *team*, *task* and *transition*.

5.3.8.1 Time

Although the programme for completion was considered *"challenging for the size"* (B-AH-200814-intvw), all TMO actors recognised the importance of completing the carriageway by the set deadline. Delays in the delivery of the new road would have had implications on dependant projects, including the preparations for the Games

> *"If you look at the political commitments…being able to deliver to match commitments made by others is usually quite an important thing"* (B-SR-010914-intvw)

The deadline was not considered to be a major difficulty for TMO members. Deadlines were considered normal within the construction industry and enabled *"focus"* on the project objectives.

> *"It's a normal dynamic in our industry. We're used to working to deadlines and pressure and all these sorts ..."* (B-IW-220914-intvw)

The carriageway was opened one week before scheduled, as discussed in Section 5.3.1. This was despite a number of interruptions at the early stages of the project. Minutes from progress meeting reported a thirty-nine day delay at the start of the construction stage, as a result of late design information (B-LES-120910-report). The programme was delayed for a further four months due to the discovery of previously unknown underground services (B-LES-240211-report). This was exacerbated by the lack of historic services information and the slow reaction from utility companies to remove the obsolete services (B-JW-230914-intvw).

Emergent actions to manage the programme and realise the deadline included extended working hours and twenty-four hour site operations. The JMC also paid suppliers additional sums to expedite the delivery of concrete beams that could not be delivered in time to match the schedule.

> *"So, ultimately we said, "Well, it's going to cost us fifty grand in delays if we wait the three months so we'll pay you a couple of grand for your guys to work*

next weekend and get your batching plant working and we can move things on"…"

Through the proactive behaviour of the JMC, the deadline was comfortably achieved and dependant projects, including the Games, were able to progress as scheduled.

5.3.8.2 Team

It was considered that the differentiation within the TMO was a contributing factor to the success of the project. As discussed in Section 5.3.3, the JMC was created as a joint venture of organisations with *"complementary sets of skills"* (B-JW-230914-intvw). JVC1 had specialist expertise in earthworks, road works and remediation, whereas, JVC2 had specialist expertise in structures and tunnelling. Although both contractors had different operating procedures, a learning environment evolved where both contractors gained experience through working as joint venture (B-JW-230914-intvw).

Relations within the TMO were positive, with actors reporting strong integration and support between team members. Early agreements and understandings were made between TMO actors that they would need to work to together to manage the complexities of the project.

> *"There was a harmony, there was positivity about everyone pushing in the right direction and I think that really contributed to an overall successful outcome for everyone"* (B-AH-200814-intvw)

The positive internal environment was attributed to the co-location of TMO actors who were all based in the same site accommodation for the duration of the project (B-GO-200814-intvw). This not only enabled daily interaction with fellow TMO members, but also allowed for any arising issues to be dealt with quickly and efficiently, through rapid site inspection and appropriate solutions being implemented.

> *"…if people know each other on a much more personal level they're much more likely to work together on a team basis and resolve matters on a much more informal basis than necessarily going through formal channels and, you know, it allows relationships to develop"* (B-JW-230914-intvw)

As a result of the strong integration, TMO actors reported of job satisfaction and positive social interaction.

> *"…we were a great team involved, going great, you know it really was an enjoyable period of time; busy, but enjoyable."* (B-GO-200814-intvw).

There was also evidence of social networks within the TMO. Senior management of both JV contractors were Board Members of the Civil Engineering Contractors Association (CICA) and had worked together on previous projects, although not as a joint venture. Given the nature of the construction industry, actors, reported that they did expected to work together at some point in the future. Moreover, as TMO members operate in the *"same pool"* contractors and consultants often recommend or employ each other on other construction projects to ensure continuity and good working relations (B-JW-230914-intvw).

5.3.8.3 Task

Evidence suggests that the complexity of the task supported the integration of the TMO. The heritage of industrial activity, contamination and unknown ground conditions resulted in a high risk of unfavourable issues occurring on the site (B-SR-010914-intvw). It was therefore recognised at the early stages of the project that all TMO members would *"share the responsibilities and act as a team to try and help each other"* (B-AH-200814-intvw), in order to achieve the project objectives.

This involved integration with other projects contributing to the regeneration programme. Evidence suggest that there was strong interaction between the client, the DE and MC. Rather than separate teams, a matrix structure was adopted "*...to make sure that things worked* " (B-SR-010914-intvw). This also supported the implementation of innovative practices. In particular those applied to the tunnelling and flood alleviation, which was highly complex.

5.3.8.4 Transition

As illustrated in Table 5.3, the carriageway was completed as planned. This enabled associate works for the Games to commence, including access to venues. The Water Authority was also able to implement the flood alleviation system that was constructed as part of the project. Furthermore, through the completion of the carriageway, the Local Authority Highways were able to direct the volumes of traffic from the minor routes to "*…a main arterial route, which was, ultimately, a lot more direct and built, suitable for purpose"* (B-JW-230914-intvw).

In general, construction of the second phase of the carriageway successfully facilitated the initiatives to regenerate of the area, with no reported issues in the transition.

> *"[URC] are using it to promote redevelopment in the East End. So, post road opening, there has been a lot of good, I think, coming from it."* (B-AH-200814-intvw)

Increased access has enabled the relocation of organisations and business to the east end of the city and stimulation of the local economy. New businesses have since located to the area and there is evidence of increased economic activity (B-AH-200814-intvw).

5.3.9 Project Success

Sources cited the delivery of the project being on time and within budget as the primary measurement of project success. Completing one week ahead of the deadline was viewed as a particular achievement, especially due to the complexity of tasks required for the completion of the project (B-AH-200814-intvw). Although, the deadline was the biggest driver (B-IW-220914-intvw), there was *"heavy penalties"* for delays (B-AH-200814-intvw). Furthermore, due to the high profile of the project, meeting the deadline was of political importance to the client and late delivery would have had an impact on dependent projects, in particular preparation for the Games.

Although client satisfaction was cited as a success measure, there was more emphasis on the wider stakeholder satisfaction and the impact the new carriageway had on the regeneration initiative. Positive feedback received from the local community towards the opening of the road, and the social impact it made to the regeneration area was an important success criterion across the TMO.

> *"The other thing that I really took a lot from was …the comments that they made about how it opened up the area and gave it a new lease on life"* (B-SR-010914-intvw)

The project was also awarded a national Saltire Civil Engineering Award for demonstrating value to the wider community, environmental improvement, and providing a catalyst for further economic development in the area (B-JV1-293015-web).

> *"I think that one of the major successes was getting the Saltire Commendation and the recognition that that brought with it"* (B-SR-010914-intvw)

The prestige of the commendation supported the marketing initiatives all TMO actors, in terms of being considered for future contracts and developing local reputation.

Despite this, the JMC did not achieve the their financial objects through participation in the project. As a consequence of the 2008-2013 UK financial crises, and uncertain

market conditions, the JMC bid application was significantly lower than the Local Authorities estimate for the phase of work.

> *"I would say that when they had set their budget, the market was totally different, so I would say their budget level was high and they actually got the job for outstanding value for money"* (B-IW-220914-intvw)

This did impact on the profit the JMC expected to receive from participation in the project, although, as a result of the design and build procurement strategy, the client did benefit from a lower than anticipated budget.

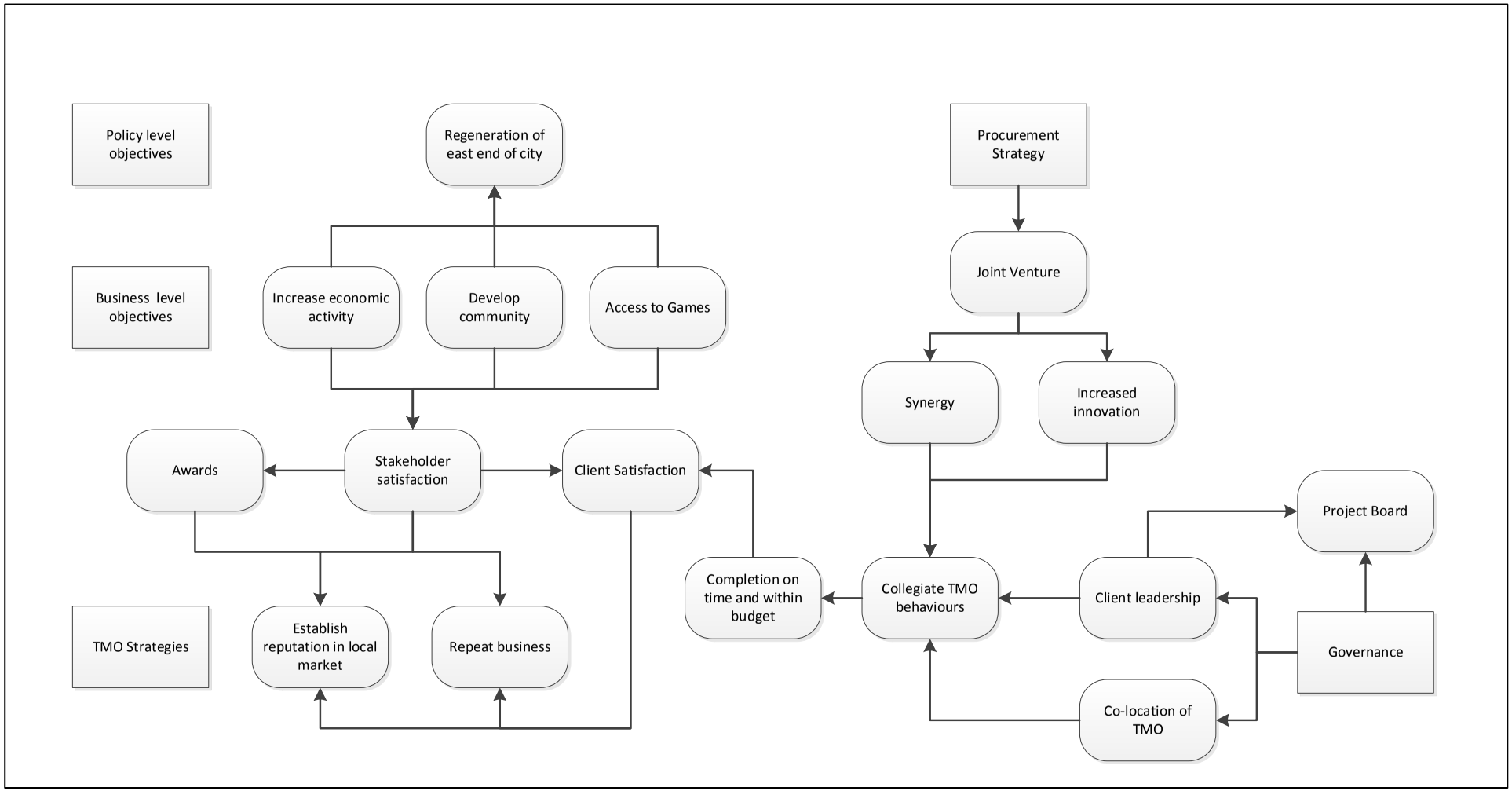

Figure 5.5: Case Study B, Causal Network Diagram

5.3.10 General findings from Case B

Report on the general findings of Case B are structured around the research questions discussed in Section 3.5. Findings are illustrated by a causal network diagram shown in Figure 5.5 that show the relationships between events and actions within the case study.

5.3.10.1 Organisational strategy

The policy level strategic objective of the client was to make contribution to the regeneration programme for the east end of the city. Construction of the road would increase access for new business and stimulate economic activity the area.

> *"It's facilitated regeneration, along with some other strategic investment that they've made ... In fact if you walk down there, compared to five years ago when I first got involved, it's a completely different place"* (B-SR-010914-intvw)

As a result of the construction, regeneration targets were achieved. Businesses had established in the area and the construction of new housing saw people relocating to the regenerated area. Stakeholders also benefited from component parts of the project, such as the flood alleviation system, which has a significant impact on locals that had previously suffered from flooding of local waterways (B-JW-230914-intvw). Also, the local football team benefited from the road. By giving access to a new coach park, the police were able to disperse crowds after a game much more quickly (B-GO-200814-intvw). Access to the Games venues was also created, including paths, walkways and new transportation routes to support visitors to the city.

The success of the carriageway enabled the TMO strategies to be realised. The positive stakeholder satisfaction increased the reputation of the TMO members and led to the commendation of awards. Through participation, both organisations within the JMC and DE were able to increase their profile to attract future business. Although, profits of JMC was not as expected, they were *"reasonably happy"* with the final account agreed for the work done (B-LC-111214-intvw).

5.3.11 Mechanisms to maintain alignment

The established governance structure was the formal mechanism implemented to maintain alignment of strategic objectives. This was conducted at the higher level of the client's organisational hierarchy. Directives to the TMO were made through the TRPM as a single source of communication. This avoided issues of client complexity or multiple directives, as evident in Case Study A. It was considered that the co-location

of client with the TMO, enabled decisions to be made much faster and, with the removal of formal administrative channels, led to a more informal and productive environment.

The design and build procurement strategy enabled innovative practices and decisions to be made. There was evidence of the client seeking to maintain control of the design, which caused frustrations for the designers. As under the contractual conditions, design responsibility is transferred to the JMC.

5.3.11.1 TMO strategic behaviour

There was no evidence to suggest that the fixed deadline had an impact on the behaviour of the TMO or the alignment of strategic objectives. This was despite the complexity of the task and the international media attention the Games received. Deadlines were considered normal within the construction industry and managed accordingly.

Figure 5.5 shows how positive client behaviour had an influence on the behaviour of the TMO team. From the start, the TSPM set out to establish an environment of mutual understanding and shared responsibly. This led to efficient integration between TMO members and focus on the success of the project. Evidence suggests that the co-location of the TMO was a contributing factor in creating an effective environment for integration. With the client, designers and contractors all working in the same building, the TMO was able to provide efficient and rapid solutions to emerging project issues. Co-location also improved communication channels between actors, thus, enabling a greater awareness of the project activities amongst the TMO and the contribution of specific tasks towards the project objectives.

There was also evidence of strong social interactions. Participants reported job satisfaction and enjoyment, as a result of participation in the TMO. Reports find that as a result of good relations within the TMO, friendships continued to evolve and two years after completion of the project many of the team members were still interacting socially.

5.3.11.2 Project Success

During the project, success was on completion of the project by the deadline. Completing the project one week before the deadline early was cited as a significant

achievement. However, due to the complexity, overcoming technical difficulties was also considered the key success driver (B-IW-220914-intvw). Success was hindered by the delays caused by utility suppliers, who were not members of the TMO. These organisations were highly task focused and concentrated only on their specific activities, within timeframes of their own organisational objectives.

On completion of the project, the main success criterion was stakeholder satisfaction and the positive feedback on the road received from members of the local residents. In particular, the contribution the carriageway made to the local community. This was acknowledged through the recommendation and receipt of awards for the positive impact on the wider community and environment. All TMO members, including the client, recognised the significance of this, for their reputation and future business success.

5.4 Case C – New Laboratory and Office Facility

Case study C involves the refurbishment and fit-out of a new-build commercial office unit for laboratory and office use, commissioned by a public sector Environmental Protection Agency (EPA). A holistic overview of the design and construction phase is provided in the Section 5.4.1, with discussions to answer the research questions of the study.

5.4.1 Background to the case

The new laboratory and office accommodation formed part of a three-year estates strategy *"…to be smaller, more flexible, more responsive and more innovative"* (C-EPA0309-report), which involved the relocation of staff from five existing laboratories and offices, dispersed across three geographical locations, into one central facility. Thereby, reducing running costs and increasing efficiencies.

Following submission of a business case to secure government funding for the rationalisation of the existing research and administration facilities, a 20-year lease was agreed to secure a strategically located building within a recently constructed business park. A TMO was formed to manage the required structural alterations of the new building, design and fit-out for laboratories and the offices, and installation of specialist equipment and furniture. Meanwhile, a temporary organisation was created, comprising of internal personnel, to manage the relocation of staff from existing offices and laboratories. A time-ordered display of key events is summarised in Table 5.5 and discussed within the case study.

2009	2011	2012	2013
• March. EPA Estates Strategy	• January. PMC led design team appointed to provide preliminary designs	• August. Advertised for tender under OJUE procedures	• July. Formal handover of facility to EPA
• August. PMC appointed to support production of the business case.	• July. EPA secure lease 20 year lease on building	• November. Main Contractor appointed to provide design and build services. • November. Construction commenced on site	• Conclusion of migration and Occupation of facility by EPA

Table 5.5: Case C: Summary of key events

Following the formal process of advertising in the Official Journal of the European Union (OJEU), a project management consultant (PMC) led, design team was appointed to conduct a feasibility study and preliminary designs with the scientists key stakeholder departments for the layout of laboratories. Once approval for facility was agreed by Central Government in July 2011, a twenty-year lease was agreed on the new building.

The invitation for tender to execute the fit-out was advertised within OJEU on 11th August 2012. The main contractor (MC) was appointed on 2nd November 2012 to provide design and construction of the new facility along with specific members of the design team. Construction on site began on 26th November 2012 and was completed for occupation on 5th July 2013, as scheduled. Migration of existing personnel to the new facility commenced on 8th July.

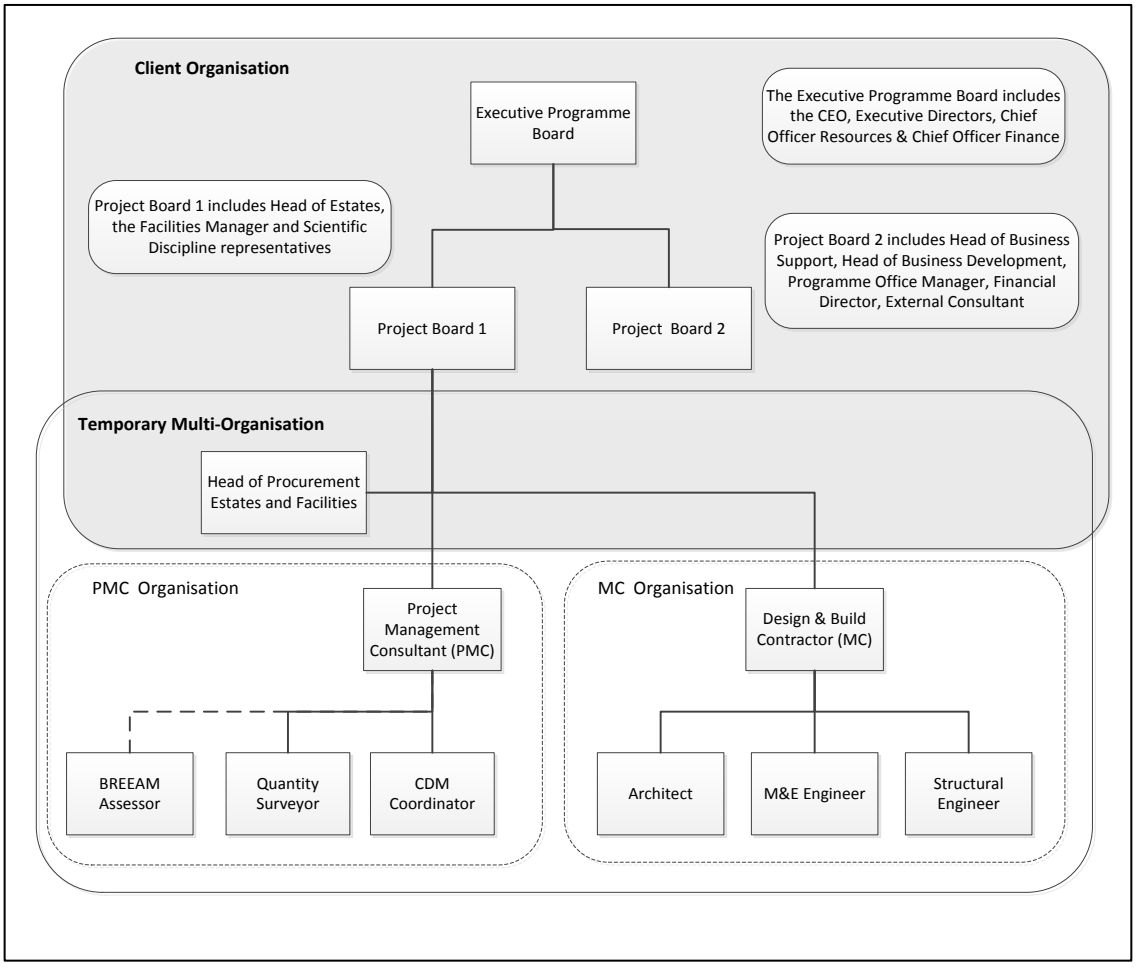

Figure 5.6: Case study C - TMO Structure

The structure created to manage the fit-out of the new facility is illustrated in Figure 5.6. As shown, the TMO consisted of three member organisations. These are identified as the client organisation (EPA), the project management consultant organisation (PMC),

and the design and build, contracting organisation (MC). Within the case, the services of the architect, structural engineer and mechanical and electrical engineer (M&E) were formally contracted to the MC organisation. Similarly, construction design and management coordination (CDMC) and the assessor for the Building Research Establishment Environmental Assessment Methodology (BREEAM) were contracted to the PMC, who already had cost management (QS) capabilities within the organisation. Contractual and governance process are discussed in Sections 5.4.5 and 5.4.6.

5.4.2 Client strategic objectives

The estates strategy made contribution to the primary objective of the EPA 2009 strategic change programme to *"improve service delivery while reducing operating costs"* (C-EPA0913-report). This was realised through the following strategic objectives (C-EPA0309-report):

1. Cost efficiency through a reduction in operating costs as a result of funding shortfalls.
2. Improved working practices and processes through efficient deployment of resources and the development of a culture of inter-disciplinary problem solving.
3. Provide a good working environment that encourages and supports synergies between teams, functions and services.
4. Reduction in carbon emissions through the acquirement of new-build facilities with a BREEAM Excellent rating and an 'A' rated energy performance certificate

The strategic objective to achieve cost efficiencies was achieved through the rationalisation of the EPA estate and the sharing of equipment and facilities across existing departments.

> *"… it's not just about sharing services with laboratories; it's about sharing other accommodation with other people. If we begin to share other accommodation, we then maybe begin to share our admin, our meeting rooms, our IS infrastructure … that's the longer term strategy"* (C-LMc-100414-intvw)

Rationalisation also provided an opportunity to review current working practices through greater integration between the specialist disciplines that would be brought together within the single facility. By the provision of *"state-of-the-art"* facilities to support operations (C-NA040414-intvw), EPA would be in a position to upgrade current capabilities and realise further business opportunities, through the creation of synergies across functions (C-PH100414-intvw).

Besides being a funding requirement of Central Government, attainment of an 'Excellent' BREEAM rating and the reduction in carbon emissions also contributed to the cost efficiency strategy, through the reduction in energy costs and consumption, by operation of a sustainable building.

> *"…it considers a lot of elements and that benefits [EPA] in that they have a working environment that people enjoy and are comfortable in and there is staff retention and sickness levels should be lower …"*(C-FW190315-intvw)

Pursuit of an *'Excellent'* BREEAM rating also influenced the design and construction to provide a healthy working environment that catered for the wellbeing of the occupants (C-FW190315-intvw).

5.4.3 TMO strategic objectives

Both the architect and PMC had provided services for EPA on previous projects and recognised the benefit of retaining *"high profile"* clients for future work.

> *"…we pride ourselves on getting repeat business because, obviously, it demonstrates that we're providing a good service and that clients want to come back to us"* (C-DJ121214-intvw)

Besides the prominence of EPA, the type and complexity of the facility also enhanced the architects project portfolio of "*developing environmental buildings"* (C-BR170315-intvw). By gaining further experience in laboratory projects, the PMC would be able to improve the organisation and individual curriculum vitae to attract further work within the science industry (C-DJ121214-intvw).

The MC also recognised the strategic benefit of being employed by EPA. Whereas, they had significant experience in the construction of commercial office developments, the unique services provided by the client organisation and the specialist laboratory fit-out would augment their experience and enable them to tender for similar specialist contracts (C-NS281114-intvw). Furthermore, as the main contractor for the business park, where the new facility was located, they benefited from being invited to tender for all fit-outs from future tenants considering relocation.

> *"We're not necessarily going to get everything our own way but we see that as an advertisement for being "okay, we built it" and we wouldn't like another contractor to come in and sort of, for wont of a better word, "muscle-in" on something that we want to keep within our grasp"* (C-NS281114-intvw).

By participating within the TMO, the MC would not only be in a better position to compete within the market sector, but would also protect its role as the first choice of contractor for fit-outs and refurbishments within the business park.

5.4.4 Procurement processes

Respondents were in general agreement that the design and build procurement strategy was the most suitable route for administration of the project. Through the contractual arrangements, EPA was able to maintain strategic alignment by transferring project risk and ensuring cost certainty (C-DJ121214-intvw). However, in order to guarantee that the new facility aligned with the intention for new working practices within the organisation, most of the design elements for the fit-out were developed prior to appointing the design and build contractor.

> *"…the case here is that they* [EPA] *wanted the design to be developed to a level that would be traditional contract but they want the contractor to take all the risks. So, they call it a design and build"* (C-FW190315-intvw)

The design strategy was maintained by novating the contractual rights and obligations of the architect, structural engineer and mechanical and electrical engineer (M&E) to the MC at the construction stage. The benefit to the project was that there was consistency in the design team from initial consultation with the client through to construction.

> *"…so the process can be speeded up because you don't have to reacquaint new designers with the whole building"* (C-BR170315-intvw)

Moreover, through the use of value engineering, the MC was also able to "*give the client a better product or less costly solution"* (C-NS281114-intvw), as they had greater influence over design and construction within the design and build procurement method.

5.4.5 Governance Structure

As shown in figure 5.6, EPA established three boards for the purpose of governance. Project Board 1, was responsible for directing the TMO and activities associated with the refurbishment. Membership consisted of the Head of Estates and Facilities (HoEF), facilities management, and representation from the varied scientific disciplines to be relocated to the new facility (C-RA-110414-intvw). Project Board 2 was responsible for the coordination of the staff relocation to the finished facility. Membership of Project Board 2 consisted of the Head of Business Support, Head of Business Development, the

Programme Office Manager, the Finance Director, and an external management consultant (C-LMc-100414-intvw). Both boards reported to an executive programme board consisting of the Chief Executive Officer and members of the Corporate Management Team (C-NA040414-intvw).

Despite having differing objectives, members of client organisation reported that having two project boards for governance caused a number of difficulties. The lack of communication between boards led to varied directives of the project requirements (C-MC100414-intvw) and differing priorities over what needed be done as part of the rationalisation programme (C-NA040414-intvw).

> *"…the two project boards … it was difficult to know who was responsible for what …"* (C-LMc-100414-intvw)

The main difficulties were establishing clearly defined boundaries of responsibility between the two boards, and the separation of design and refurbishment of the new facility from the relocation of end users, and the development of new working practices.

> *"…there was a lot of overlap so some things were just falling down between the two groups. Some things involved duplication of effort because the two groups were doing them"* (C-RA-110414-intvw)

The governance arrangement also caused frustration for TMO members, as directives were being instructed through both boards with no clear jurisdiction or single point of authority. Directives were often conflicting, inconsistent and brief (C-RA-110414-intvw). TMO members felt that they were being left with the responsibility of prioritising the requirements of each board and were required to self-govern, in order to ensure the design requirements of the project was maintained (C-BR170315-intvw). This was later resolved through the appointment of a new Head of Estates and Facilities (HoEF) who acted as the project manager and single point of contact between the boards and the TMO.

5.4.6 Client behaviour

There was evidence that the dual structure of the projects boards and the initial absence of a single point of responsibility from within the client organisation was a cause of initial frustration for the TMO.

> *"If you've got two heads and that person makes a decision, this person may disagree with it a month later or it may take them a month to actually change the decision of that person…".* (C-BR170315-intvw)

The appointment of the HoEF prior to the commencement of construction made a significant impact to the project. "*That was where the success really started to happen"* (C-BR170315-intvw). Robust change control processes were implemented by the HoEF to enable a single point of contact between the TMO and the client organisation (C-RA-110414-intvw).

> "*…the [HoEF] attended pretty much every meeting; they were involved in discussions of any potential issues; they were involved in discussions of the solution and they were pretty quick at making decisions to aid progress.* (C-DJ121214-intvw)

Although, the EPS personnel had difficulties in understanding the rationale behind the newly implemented processes, the *"rigour and structure"* in communications and the single point of control and leadership from within the client system, enabled the TMO to focus on the tasks, and efficiently progress with the project (C-BR170315-intvw).

5.4.7 Resistance to change

The greatest difficulty faced by the TMO was from the EPA personnel that, in general, were resistant to the relocation. There were reports of stress, and staff either leaving their jobs or seeking redeployment elsewhere in the organisation as a result of the consolidation plans (C-PH100414-intvw).

> *"Some people decided ahead of time that they would not be able to cope with driving on the motorway… and left the organisation because of the stress"* (C-PH100414-intvw).

Relocated personnel were also resistant to the new way of working and the sharing of desk spaces to create a more flexible environment (C-KMc-110414-intvw). Despite a consultation process with the design team, varied departmental representatives reported frustration that their requests for particular requirements and layouts were not being provided as requested.

> *"...the feedback from the users was quite often that it was different from what was actually intended in terms of how the room was laid out and where the equipment was positioned"* (C-NS281114-intvw).

Although, authorisation for the final layout were made by the project board, based on costs restrictions, capacity and the integration with other departmental needs (C-MC100414-intvw), the general perception of the end users was that the TMO lacked sufficient experience to understand the requirements of each department.

> *"If we'd done more up front for them to understand plans. If we'd also made sure, technically, that the external people had done this sort of stuff*

> *before…obviously, there would be things that people have never done before and that's not a problem in itself. I think it's about owning up to that…"* (C-LMc-100414-intvw)

This was despite previous experience of working with EPA and previous science and laboratory experience.

5.4.8 TMO Behaviour

The project strategy of the TMO was influenced by a number of environmental factors. These included the governance mechanisms, client behaviours, resistance to change and the varied strategic objectives being pursued through the project. The strategic behaviour of the TMO in delivering the project is explored under the themes of *time, team, task* and *transition*.

5.4.8.1 Time

The imposed deadline for completion of the fit-out was driven by two factors. First, EPA was renting properties that were nearing the end of their lease and short-team leases were was not a viable option (C-RT161214-intvw). Secondly, in order to ensue continuity of the operations activities of the business, there was a fixed deadline for the migration of the staff, which was scheduled to commence in conjunction with completion of the fit-out programme (C-LMc-100414-intvw).

Evidence shows some difficulties in the early stages of the project that impacted on the schedule. Firstly, it was reported that the design team were appointed before the brief was finalised and therefore needed "*additional analysis"* for clarification of the requirements (C-BR170315-intvw). There was also a need for additional design and structural alterations within the new laboratory space, which extended the pre-contract stage of the project, consequently, delaying the invitation for tender being advertised

> *"…if you went at an earlier stage and then you were incurring issues like that during, while on site, that would obviously have had an impact on the programme but we had been through that process and we had a detailed robust design when we went out to tender" (*C-DJ121214-intvw)

Despite this, the PMC sought to ensure that the design information was complete at the time of going out to tender, thereby avoiding delays at the post-contract stage and maintaining the programme throughout the construction period.

5.4.8.2 Team

Actors reported of collegiate and positive working relationships within the TMO. There were regular meetings and consistent communications to achieve integrated solutions to project difficulties "*…it was very much a team working solution*" (C-DJ121214-intvw)

A contributing factor to the successful integration of the TMO was that members of the design team had previously worked together on other EPA projects (C-RA-250914a-intvw). Not only did this support communications between actors, but also enhanced understanding of the *"programme and commercial implications"* (C-DJ121214-intvw).

> *"…I think it also helped that there was an understanding, especially with the architects of what they would like to do and what they could do, but they understood that as well…and I've been there before when they get a very precious architect…"* (C-RA-250914a-intvw)

Successful integration of the TMO contributed to completing the project by the deadline, and also towards a reduction in costs through the procurement processes. Contrary to end user perceptions, previous working relationships and experience on other EPA laboratories enhanced understanding of the requirements and understanding of the client systems (C-RT161214-intvw).

5.4.8.3 Task

As the building was originally designed for commercial office use, a number of alterations were needed in order to accommodate the construction of the new laboratories. These included risers through the building and structural reinforcement of the precast concrete floors, as previously mentioned in Section 5.4.8.1.

> *"…there was a lot of what you would call abnormal works…we had to demolish the precast; we had various holes throughout the building, four storeys high which were as long as this room and as wide as this room. So, there are huge health and safety issues there to deal with*. (C-NS281114-intvw).

In addition, reinforcement was also required to minimise the *"vibrations"* in the concrete floor as this would have a potential impact on equipment readings, due to the sensitivity of the specialist instruments used by the EPA scientists.

> *"... fairly late in the day somebody said "I can feel this floor move"...whether they could or couldn't I'm not entirely sure but one of the people that happened to be there was one of the chief scientists who said "our instruments are really sensitive; they can be affected by, literally, somebody walking past when they're taking a measurement"... after that he started talking in a different language... I didn't understand it"* (C-RT161214-intvw)

The impact of the vibrations to the concrete floors had not been considered at the design or tender stage. This was attributed to the lack of input from EPA scientists, into the initial design and development of the laboratory layouts, and a *"misunderstanding of the level of specialist detail"* required to fulfil the requirements (C-RA-110414-intvw).

5.4.8.4 Transition

The refurbishment was complete in time for the migration of EPA staff to commence.

> *"We got the keys on 5th, we moved in on 8th. We ironed out some problems with the first lot of people that came in logistically around the move…"* (C-LMc-100414-intvw)

The short gap between handover and occupation ensured minimum disruption and continuity of the services provided to EPA clients. However, the consequential stress of EPA personnel prior to, and following, the relocation resulted in a downturn in productivity.

> *"You know, it must have been like nine months when we went from being a high performance, motivated team to the lowest and then bringing back. And now, six months later, it's starting to get back to that sort of morale and motivation that we had before and we're starting to really motor in terms of delivery again. So you can add that up, 15 months is the impact of the move"* (C-PH100414-intvw)

Despite the lack of integration between EPA scientists and the TMO, and the frustration of the end users in the perceived "*difficulty in terms of meeting our requirements"* (C-LMc-100414-intvw), the fit-out achieved the design objectives, in terms of creating an efficient working environment that allowed for greater integration and synergies between services, as proposed in the estates strategy (C-EPA0309-report).

5.4.9 Project Success

During the project, and after completion, success was measured on handover of the facility as scheduled, within budget, and to the specified level of quality. The HoEF reported that project was complete within the original budget and to the deadline, "*in terms of quality, there have been a number of issues but generally minor"* (C-RA-110414-intvw).

Client satisfaction was rated as a high success criterion by TMO member organisations. By achieving client satisfaction the consultant organisations would be in a better position to successfully apply for repeat business with the *"high profile client"* (C-DJ121214-intvw) and attract further contracts in the scientific research sector. The PMC

reported that on completion of the facility, the client *"was delighted with the end result and the building was functioning as it should have"* (C-DJ121214-intvw).

A third measure of success for both the client and TMO member organisations was end user satisfaction. The perception of the EPA personnel presented mixed results. During construction and on completion, end users were frustrated that that their individual requirements for working spaces had not been delivered, as expected.

> *"I think the fact that nobody went ballistic and the systems kept going was a good measure of success, because there are some people in here that could"* (C-KMc-110414-intvw)

However, a post occupancy survey was reported as *"pretty good"* and that staff expectations had been met (C-RA-110414-intvw). Much of the frustration could be attributed to the resistance to change, as discussed in Section 5.4.7, which contributed to the initial negative perception of project success.

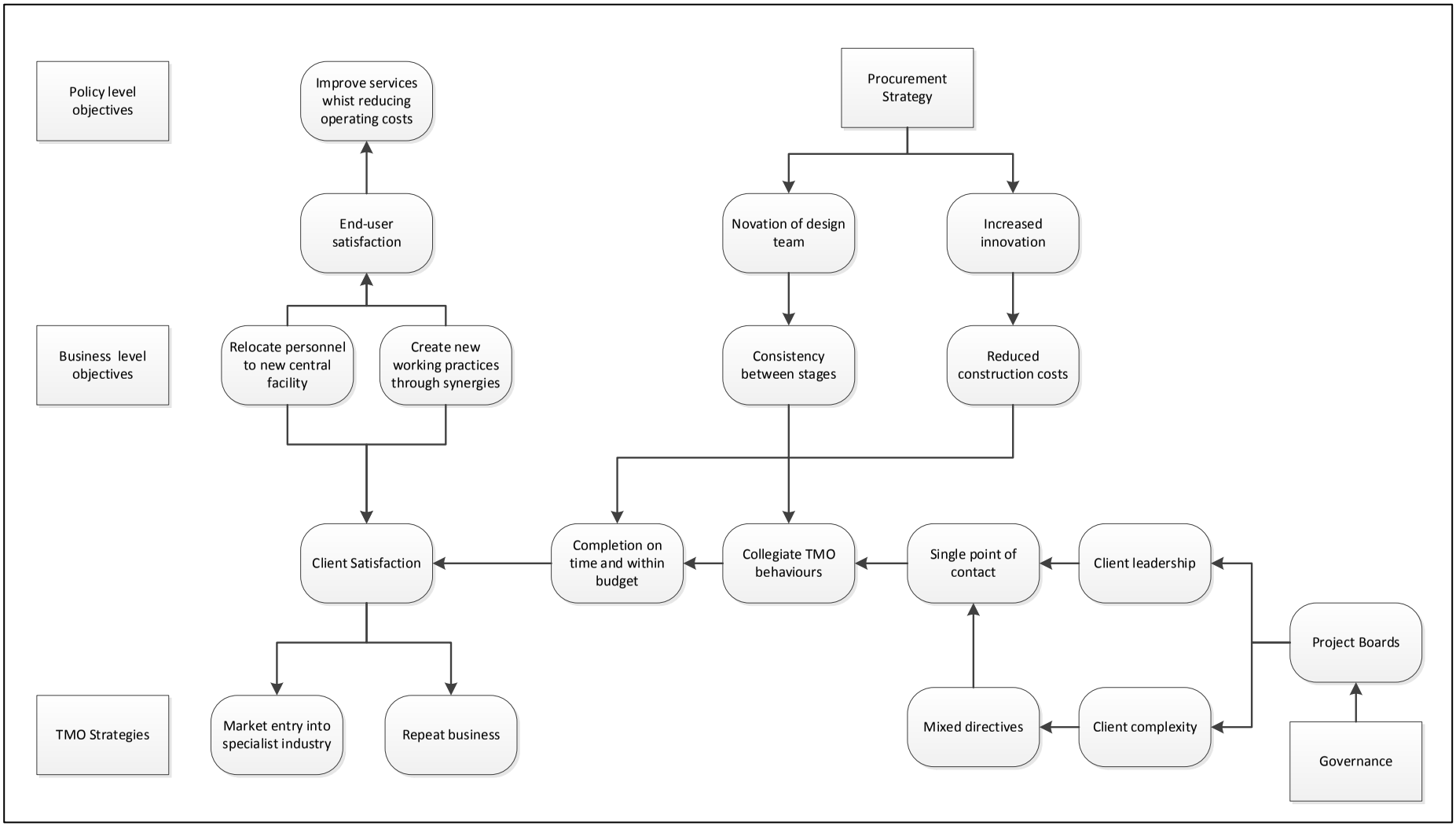

Figure 5.7: Causal Network Diagram - Case Study C

5.4.10 General Findings from Case C

Report on the general findings of Case C are structured around the research questions discussed in Section 3.5. Findings are illustrated by a causal network diagram shown in Figure 5.7 that shows the relationships between events and actions within the case study.

5.4.10.1 Organisational Strategy

The client policy objectives were made explicit within the EPA 2009 strategic change programme, to improve services while reducing operating costs. This was realised through the estates business level strategy for the rationalisation of EPA premises. By relocating staff from multiple laboratories and offices to a single facility, EPA could make substantial reductions in operating costs, whilst achieving targets for reduce carbon emissions, and creating synergies to enable new working practices to be developed.

However, findings identify conflicts between strategies at the business level. In the first instance there was resistance from personnel from within varied scientific departments, who were reluctant to move to the new relocation and, the consequential, changes in working patterns. Secondly, personnel perceived a lack of alignment between the specific requirements of each scientific department and the strategic objective of integration between specialisms. This resulted in the layouts of laboratories not being delivered, wholly as expected, and discontent expressed by end users.

The estates strategy for rationalisation was understood by the TMO. As illustrated in Figure 5.7, through alignment with the client business level objectives, the PMC and associated consultant organisations would be able to seek repeat business with the existing client, and enhance their market position in the scientific personnel. Whereas, the MC enhance their experience in specialist laboratory fit outs in order to expand their portfolio and attract future business in the sector.

5.4.10.2 Mechanisms to maintain alignment

The success of mechanisms to maintain strategic alignment were mixed. The design and build procurement strategy was successful. Design risk and the risk of delays, as a result of creating a design team, were mitigated through the novation of design team members to the contractor, after the contract was awarded. However, the efficiency of the two

projects boards, created for the purpose of governance, suffered as a result of weak internal communications and inherent client complexity. Client behaviours also had an initial impact of the activities of the TMO. As discussed in Section 5.4.6, it was only when a single point of contact between the project boards and the TMO, was appointed, in the form of the HoEF, that the project began to progress productivity. Until this point, TMO members reported of frustration at the varied directives being given from the each board and the need to self-govern.

5.4.10.3 TMO strategic behaviour

There was no evidence to suggest that the fixed deadline had an impact on the behaviour of the TMO or the alignment of strategic objectives. TMO members did not report of any undue pressure as a result of the deadline, instead "*it probably focused the mind a bit"* (C-RT161214-intvw). Besides, additional works that had an impact one the schedule, the project was complete in time for the relocation of staff to commence.

There were also reports of good relations within the TMO, with success of the project being partially attributed to the positive working relations between TMO members (C-DJ121214-intvw). It was reported that prior working relations and previous employment with the client did enable greater understanding of the client strategic objectives and integration of TMO actors (C-BR170315-intvw). The greatest difficulty the TMO faced was the multiple directives being given by the two boards, and the lack of integration from EPA specialists in the design process. Findings suggest this could also be attribute to the composition of the project board. Difficulties were alleviated through the creation of a single point of contact between the boards and the TMO.

5.4.10.4 Project success

During the project and on completion, the general measure of success was on completion and handover of the new facility by the deadline, within budget and to the specified level of quality. As the construction project needed to align with the migration project, it was critical that construction was complete in time, in order to allow efficient relocation of staff and normal business activities to be maintained. It was reported that the deadline and budget targets were achieved, and the transition did progress as planned.

TMO members reported of client satisfaction on completion of the project. Achieving client satisfaction was the important criterion in the pursuit of the individual TMO strategic objectives to attract repeat business and enhance market position in the scientific research and laboratory sector. Despite, initial dissatisfaction by EPA personnel and end-users, that request for facilities were not being delivered as expected, there was general satisfaction at the final result, after the transition, and when the building was in use.

5.5 Case D – New Tourist Visitor Centre

Case study D involves the design and construction of a new visitor centre for a battle site of historical significance, owned and managed by a chartable National Conservation Trust (NCT), as part of their estate. A holistic overview of the project is provided in the Section 5.5.1, followed by discussions addressing the research questions of the study.

5.5.1 Background to case

The new visitor centre was built to replace an existing heritage centre that was no longer *"fit for purpose…and did not give the right impression for the trust"* (D-DMc011214-intvw). The existing 1960's building had received a number of minimal upgrades over the years. But, over time the exhibition and interpretation of the battle had become *"very poor and tired"* (D-JR241114-intvw) and in need of investment (D-TIC-041114-intvw). Following a review of NCT's estate in 2010, funding was received from the Central Government to create a facility in which the core mission was to:

> *"To create a world class visitor attraction which reflects the battles…exceptional significance in British and European history which will be completed in time for the 700th year anniversary of the battle in 2014"* (D-NCT0610-report)

A condition of the Government funding was that the project would be commissioned as a joint venture between NCT and a government executive agency responsible for a number of historic monuments (HEA). The HEA would also act as project managers for the scheme on behalf of NCT. The second condition was that the project would be complete in time for the 700th anniversary of the battle in 2014. Following a design competition, consultants, including interpretation design, architectural design and landscape design, were formally appointed. Appointments coincided with the official launch and public announcement of the project in October 2010.

The scheme design for the installation was complete in May 2011, followed by detail design in December 2011. An application was submitted for additional funding from the Heritage Lottery Fund in April 2011 and awarded in January 2012. Following the formal process of advertisement in the Official Journal of the European Union (OJEU) the Main Contractor (MC) was appointed in May 2012 with construction commencing on site in June of the same year. A time-ordered display of key events is summarised in Table 5.6.

2010	2011	2012	2013	2014
CG grant and HEA appointment	April. Application for HLF	January. HLF grant application approved	October Handover of construction	January. Completion of Interpretation fit-out
October 2010 Appointment of design team.	May. Approval of Scheme Design	Advertisement for tender under OJEU procedures	Fit-out of interpretation	1st March. Opened to public
October 2010 Project official launch	December. Approval of Detail Design	May. Appointment of Main Contractor	December. Handover of facility to NCT	23rd – 24th June. 700th year Anniversary celebrations
		June. Construction works commence on site		

Table 5.6: Case D: Summary of key events

The construction works were complete for handover, four months later than scheduled, at the end of October 2013. As a consequence, the fit-out of the interpretation was also delayed with completion in January 2014. NCT's visitor project team took occupancy of the building for commissioning and training in December 2013. Despite the delays, the visitor centre opened to the public on 1st March 2014, ahead of the 700th anniversary of the battle on 23rd June 2014.

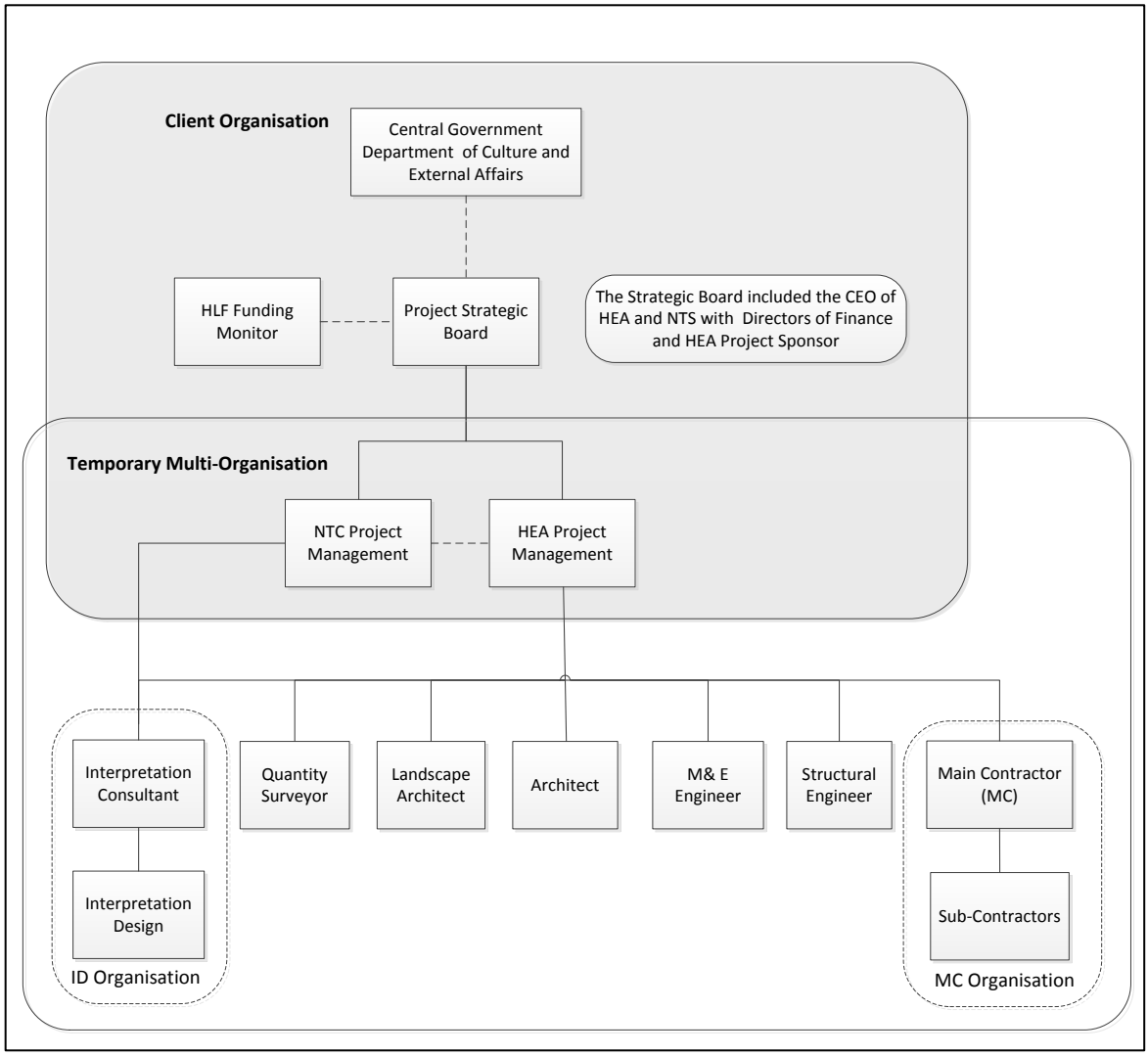

Figure 5.8: Case D TMO Structure

Figure 5.8 illustrates the structure of the TMO created to realise the client organisation's strategic objectives. The TMO consisted of eight organisational members. These are identified as the client organisation, formed as a joint project management team between NCT and HEA, the main contractor (MC), and design consultants consisting of Interpretation Design (ID), the architect, landscape architect, mechanical and electrical engineer (M&E), structural engineer and quantity surveyor (QS). Within the case Computer Generated Imagery (CGI) were sub-contracted to the ID organisation as a condition of Government funding. Similarly, sub-contractors within the construction element of the project formed part of the MC organisation.

5.5.2 Client Strategic Objectives

As stated in the project definition statement, NCT's mission for the visitor centre was to *"communicate the local, national and international significance of site to visitors and*

to create an enjoyable and accessible learning experience for all" (D-NCT0610-report). This would be realised through the following strategic objectives:

- To improve the visual impact of the site to give it presence in the landscape and assist in attracting additional visitors.
- To conserve and enhance the site in its role in commemorating the battle
- To provide visitors with an experience which immerses them in the chaos, excitement and honour of battle
- To provide a facility which demonstrates NCT's values as a conservative charity
- To raise the profile of the NCT in its role to protect and promote the countries heritage
- To provide a financially sustainable resource with the flexibility to adapt to future change.

The project objective was to conserve the historical battle site and provide a suitable setting in which the story of the battle could be told in a modern and *"dignified manner that was fitting for the battle itself"* (D-DA220616-intvw).

> *"You've got a national war memorial, the site of an iconic battle … that's the context that you're dealing with. An incredibly significant part of* [the countries] *heritage, which is set in trust and demands and justifies investment. It needs to be interpreted adequately and well… and there are huge opportunities in that"* (D-TIC-041114-intvw)

The biggest challenge for NCT was that, although the iconic battle had been commemorated for hundreds of years, there were no physical artefacts in which to exhibit. The current exhibition consisted of replicated uniforms and displays that did not *"cater for a 21st Century the audience"* (D-CP271015-intvw). The precise location of the battle also remained unknown. The bore stone, on which the victory flag had been raised, had been chipped away over the years, with only a small fragment remaining. Furthermore, the existing monuments that had been erected over the years to commemorate the battle had begun to erode. As a consequence of the high competition in local tourism visitor numbers to the existing heritage centre were in decline (D-CW011214-intvw).

Construction of the new visitor centre contributed to the strategic objectives of NCT. Through Government and Lottery funding NCT was able to conserve the site and *"bring dignity back to a suite of monuments, making sense of them and improving the*

landscape setting for those monuments" (D-DMc011214-intvw). It also provided an opportunity for an ambitious and innovative way of presenting the battle site that was considered *"appropriate for its historical significance"* (D-TIC-041114-intvw). This was achieved through the use of 3D technology to tell the story and immerse visitors in the battle itself.

> *"By creating a really innovative, new experience that's kind of cutting edge the Trust strengthened its position within the heritage sector and it strengthened and refreshed its own reputation amongst members and non-members as being a modern institution, being technologically savvy, knowledgeable about in terms of what we know about IT and heritage interpretation"* (D-TIC-041114-intvw).

Through the new facility and the innovative approach to exhibiting, NCT was able to attract and significant number of additional visitors, which included educational visits from schools and overseas tourist groups. This not only provided financial sustainability for the site, but also made financial contribution for future projects. Besides raising the profile NCT, the use of 3D visualisation also achieved the ministerial strategic objectives to showcase the countries digital design technology (D-NCT0610-report). The project was complete in time to commemorate the 700th anniversary of the battle with a two-day celebration promoting national heritage and tourism.

5.5.3 TMO Strategic Objectives

Portfolio enhancement was the main strategic objective for consultants participating in the TMO. The opportunity to demonstrate innovation and creativity through the interpretation would enhance both, the IC and CGI organisations competitive position in a specialist market segment. By taking a unique approach to exhibition design and showcasing their talent through the visitor centre, the IC were of the opinion that they could redefine standards within the visitor centre and museum industry.

> *"… we created an exemplar within the industry which people are still looking at and they will be in 50 years to come…But, the real test, for us, will be going forward into the future. Will other large scale or medium scale visitor centres be more likely to view digital interpretation as a viable means?"* (D-CW011214-intvw)

The architect also recognised the strategic benefits of participating in the project.

Besides *"widening the experience"* of the firm within museum industry, positive public relations and the high profile of the project would benefit internal marketing efforts (D-DA220616-intvw). Both the Senior Associate and project manager for the CGI also

recognised the benefit for individual employees working on the project, in terms of enhancement of employee's curriculum vitae.

Similarly, portfolio enhancement was the long-term strategic objective for the MC. The contractor had previously performed works for HEA, and considered that construction of the visitors centre would complement their current and previous portfolio to attract future work.

> *"…it was the type of work that we had done in the past and we wanted to be able to demonstrate that we were still capable of doing that type of project in the future as well"* (D-GMc2808150intvw)

The MC was also aware of the high profile attention the visitors' centre was attracting, and through successful participation in the TMO, the MC could expand their client base in the museum and tourism industry.

5.5.4 Procurement processes

The views of respondents to manage the contractual arrangements under the standard Government Conditions of Contract for general contracting (GC works), traditional procurement strategy, were mixed. Whereas, respondents understood that the GC works was the most common form of contract used for government projects, it was felt that it was only suitable for the build aspect of the visitor centre.

> *"…the problem is that the* [GC works] *contract is set up, brilliantly, for works like concrete bricks, foundations, steelworks, even shop fitting, things like that, but it doesn't contain any of the courses that are needed when you are dealing with less tangible deliverables like media, digital works, and it doesn't cover any of that intellectual property"* (D-CW011214-intvw)

The interpretation aspect of the project was, therefore, managed under the Design and Build GC works conditions of contract. However, in contrast to normal practice, where a preliminary design may be developed prior to advertising for tender, and finalised by a design and build contractor, who has responsibility for the design and build, within digital media the design is usually developed in conjunction with a specialist contractor employed to undertake the build. As advised by the lead designer *"…you don't complete a finished museum design for a tender, you can't"* (D-CW011214-intvw), instead the IC submitted a *"design response"* and ideas for the interpretation under normal conditions of competitive tendering.

Under the conditions of Government funding, CGI were nominated as a sub-contractor to ID, to build and install the interpretation. The benefit of the contractual arrangement was that the client was able to draw on the creative expertise of IC to design the interpretation, and the technical expertise of CGI for development and installation. Thereby, realising the strategy for an innovative 3D immersive experience (D-JR241114-intvw).

5.5.5 Governance processes

The formal governance process for the new visitor centre involved the creation of a Strategic Board to represent the interests of Central Government, as the main funders, and the interest of NCT as the owners and operators. As shown in figure 5.8, membership included Chief Executives, Directors of Finance and project sponsors from both the Trust and HEA (D-HEA0613-report). The Strategic Board was responsible for reporting progress of the project to the Government Public Audit Committee and the Department of Culture and External Affairs. A representative from HLF was also in attendance to monitor spending of funding.

Although HEA and NCT had collaborated on previous projects, the visitor centre was the first project that had been managed as a joint venture between the two public sector organisations. It was perceived that the decision for the joint venture was political.

> *"Government ministers really want to push collaborative working across the heritage sector…we were able to sort of wave the flag and say this is the biggest collaboration ever between the two biggest heritage organisations in the country working happily together. Which, a lot of people were very sceptical about, actually, but it worked incredibly well"* (D-JR241114-intvw)

The differences in organisational culture between the government agency and the charity did raise initial concerns regarding the collaboration and alignment of the varied stakeholders strategic objectives. In order to ensure the interest of both organisations were represented, a memorandum of agreement was drawn between the two heritage organisations, which also included the legal agreements for management of the project (D-JR241114-intvw).

Despite the Governments conditions, project management responsibilities were shared between the HEA Project Manager and the NCT Project Director, who jointly reported project, related issues to the Strategic Board. NCT also provided expertise to guide the

design of the interpretation, which would be managed by a NCT's visitor project team when complete.

5.5.6 Client Behaviour

Despite the perceived challenges of the partnership arrangement between HEA and NCT, participants reported of strong leadership by the project managers of both HEA and NCT.

> *"There were always checks and balances. Nobody ever didn't know what was going on and there was proper time taken to ensure that things were not running over budget that things were running to time and if any dangers were flagged up then they were dealt with"* (D-CP271015-intvw)

There were regular and inclusive meetings with all TMO actors, through which issues pertaining to the project would be openly discussed. This enabled information and decisions to be efficiently communicated to the varied levels within each TMO member organisation (D-DA220616-intvw).

At the time of construction the country was also preparing for a referendum on independence, for which the battle was interpreted, by the media, as a significant event for current government.

> *"Yes, everyone was on their toes. Very exposed as well, it wasn't like we were hidden away…it was a very transparent project. It was very public contract"* (D-JR241114-intvw)

In contrast to the media perceptions, the HEA project manager attempted to "*depoliticise"* project activities (D-DA220616-intvw). It was felt that neither HEA nor NCT could be seen to be taking a political position within the referendum debate. Therefore, in order to avoid any impact on project progress, actions were put in place to prevent the media from contacting TMO members and causing any disruptions.

> *"There were political sensitivities… yes, but not directly. I think to be fair to* [the PM] *did protect us a wee bit from that, and God knows what they had to go through. There were meetings that they would have had to go to that I wouldn't ever thank you to go to. I like what I do. I couldn't do what they do. I'm not capable nor want to even if I was"* (D-DA220616-intvw)

TMO actors were aware of the impact the project had on the current political environment and accepted the lack of flexibility in the programme. Therefore, where possible, support was given, in terms of "*extra money and the slight extension of the deadline"* (D-PC150415-intvw) in order to open in time for the 700th anniversary.

5.5.7 TMO Strategy

The project strategy of the TMO was influenced by a number of environmental factors. These included governance mechanisms, the procurement strategy, client leadership, the political environment, and the varied strategic objectives being pursued through the project. The strategic behaviour of the TMO in delivering the project is explored under the themes of *time, team, task* and *transition*.

5.5.7.1 Time

As discussed in Section 5.5.1, the driver for the published deadline was the 700th anniversary of the battle, which was scheduled for commemoration by an official opening of the visitor centre on 23rd and 24th July 2014. Moreover, Central Government had stated in their manifesto that the project would be complete by the deadline (D-CG0511-report)

> *"It would have been a bomb going off if this project didn't complete on time... This project could not afford to fail under any circumstances!" (*D-PC150415-intvw)

Despite the pressure of achieving the immovable deadline, participants agreed that a fixed deadline was a necessary and positive attribute in the management of the project.

> *"Well, it's a double edged sword, isn't it? ... it focuses people. It did mean that decisions got made whereas I think if there was a slightly weaker deadline in terms of it being fixed there would have been more pressure"* (D-CW011214-intvw)

As reported by the HEA project manager, "*you can't argue with a deadline, you can't, everyone knows they've got to meet it"* (D-JR241114-intvw). Through the implementation of a robust *"change control and key issues reporting system"* (D-DMc011214-intvw) the HEA project manager was able to manage excessive delays by keeping all TMO members informed and taking action when necessary. This included overlapping activities and making necessary amendments to the project schedule.

5.5.7.2 Team

The composition and differentiation of the TMO resulted in a number of non-standard collaborations. Despite the cultural differences between HEA and NCT, participants reported of a productive relationship between the two organisations.

> *"One is a charity and one is a Government funded organisation. So you would think that they wouldn't necessarily be natural bedfellows but on this particular project they worked pretty well together"* (D-CP271015-intvw)

However, there were notable tensions between other TMO member organisations. Whereas, IG were a *"creative design company who are used to design and build and being in control"* (D-DMc011214-intvw), ICG, as a nominated subcontractor, were part of an academic research unit and did not have the same level of commercial experience. "*Differences in the way of working"* were also identified by the NCT Projects Director (D-DMc011214-intvw), and intervention was sought to develop a stronger working relationship between actors.

The inherent sentience between disciplines was also attributed to the *"personality clashes"* between the MC and the architect (D-DA220616-intvw). As recognised by the HEA project manager in the early stages of the project, membership of creative organisations in the TMO would require additional management initiatives to integrate the varied actors.

> *"It's just when you work with creative people you're going to get these personality clashes. The creative ego is a strong one"* (D-JR241114-intvw)

The Interpretation project manager for NCT reported that much of his role involved managing the relationship between actors (D-TIC-041114-intvw).

> *"I think I had to work hard to keep an even keel and hold things together, ... part of my job is stakeholder management and there was, in any good team, you've got people who are strong leaders and people who are ... who balance that and so there were inevitable clashes…So, part of my job was to sort of manage those to some extent for the good of the project as a whole"* (D-TIC-041114-intvw)

Similarly, the HEA project manager reported that she was often required to *"tiptoe through the egos"* in order to motivate TMO actors to integrate.

> *"That was a lot of my job. "... Aye, you're brilliant...now get on with it. Get your finger out"..."* (D-JR241114-intvw)

Despite the conflicts between actors, TMO organisations did understand each other's contribution to the project and reported that they would be working on projects together future.

5.5.7.3 Task

One of the greatest challenges for the project was the complexity of the interpretation. The 3D exhibition was unique, in that each element of the immersive experience needed to be computer designed and coded. Many of the activities involving this had not been done before, and a number of aspects, including the 3D modelling, were being designed

and developed as the project progressed. This caused difficulties for the architect and the engineers who, under the conditions of contract, had designed the detailed elements of the building prior to the construction phase.

> *"The difficulty with the interpretation package for this, was that some of it was so innovative they couldn't actually tell us what they needed until we were on site…our processes aren't aligned"* (D-DA220616-intvw)

The input of the academics advising on the accurateness of the interpretation also caused difficulties for the ID organisation. In the absence of existing artefacts, NCT wanted to ensure that the display was as accurate as possible. It was, therefore, decided that all content would be verified by an expert academic panel prior to CGI coding and production. Whereas, historical accuracy was of paramount importance to the interpretation, delays in academic agreement on specific attire or posture had an impact on the deadline, and the design and production of CGI activities

> "*They couldn't make their minds up…or even worse, and this happened on numerous occasions, they changed their mind after we'd actually produced something"* (D-PC150415-intvw)

A second difficulty was the integration of tasks between TMO members. Due to the delays, the IG and MC were required to work simultaneously in the building. It was reported that in order to manage the cabling, IC technicians would typically cut holes in the newly built or freshly painted walls. The next day MC would return to fill the holes, inevitably creating dust near the newly installed stereoscopic projectors.

> *"…getting dust into one of those projectors is thousands and thousands of pounds"* (D-DA220616-intvw)

Task focus was evident on the project. It was reported that nearing handover, actors within the CGI organisation were *"working through night"* in order to complete the installation (D-PC150415-intvw). Actors working on other areas that *"were not really that interested"* in the interpretation, focused on completion of the activities they were responsible for (D-DMc011214-intvw).

5.5.7.4 Transition

The new visitor centre was initially scheduled for formal handover in October 2013. Due to the series of delays, previously discussed, the NCT visitor project team were unable to take occupancy until January 2014. The delay left only six weeks for the transition period between handover and opening to the public. Due to the complexity of the interpretation and the new technologies involved, a reasonable transition period was

required to allow for commission of the 3D interpretation. This was besides, the required staff training, testing and other activities involved in operationalizing a visitor centre, such as retail and catering.

> *"I think in terms of day to day running because we didn't know what it would actually be like when we were open to the public. We did a kind of soft opening, to an extent whereby we invited members of the public to come in and test it. We had a lot of schools come in and test it just to make sure the technology worked, the visitor experience worked and to see how people reacted as went into the building"* (D-CP271015-intvw)

The new visitor centre had the 'soft opening' on 1st March 2014, prior 700th anniversary commemorations, with TMO organisations providing additional support as necessary. Furthermore, despite the tensions between creative actors during the project, the architect has reported that they have been working on another project with ID, and the MC has continued to work with HEA, NCT and the architect.

5.5.8 Project Success

The focus of the project during construction was opening the visitor centre in time for the 700th anniversary commemorations. Delivery on time, was the also the key criterion for Central Government under the conditions of sponsorship. While, the construction phase was completed later than schedule, the overall project was ready prior to the official opening and delivered within the constrained budget.

Although, completion in time for the official opening was of significant importance, only four sources cited the opening of the visitor centre on time and within budget as a key measure of project success. The primary measure of success was cited as the finished quality of the attraction, assessed after completion. The majority of actors perceived 'visitor feedback' as the being the most important criterion.

> *"I've always believed that the success of a project is really about how the public perceive it. I'm a great believer in it's all very well being right and accurate and being academic but it's only as good as the experience of individuals because this is all about heritage interpretation and museums, it's all about making things accessible"* (D-TIC-041114-intvw)

Initial feedback from visitors was *"a mixed bag, but overwhelmingly positive"* (D-CP271015-intvw). The negative reaction was primarily due to the non-conventional and interactive way of exhibiting the story of the battle, in contrast to the traditional method of display and *"learning by reading, passively"* (D-TIC-041114-intvw). However,

social media sites such as Trip Advisor did show an improvement in public perception in months following the opening and engagement with schools was very successful.

> *"Within a couple of months we booked out for the whole school year for 2014 and 2015. That was ten schools a week, every week so we had a waiting list of schools. We couldn't cope with the demand"* (D-CP271015-intvw)

Another measure of visitor satisfaction was the awards that the new attraction received. In the first year of opening, the visitor centre won the Stanford Award for school visits, and the Herald Digital Business Award for the learning website. In addition, NCT won a marketing award for the battle brand, and the project, as a whole, won a Civic Trust award for the contribution and benefit to the community. "*So, I think that basically it tells us we're doing something right"* (D-DA220616-intvw).

Client satisfaction was also perceived as a critical measure of project success. It was important to the MC and the architect that client relationships were positive on completion of the project.

> *"If a client shakes your hand at the end of the job and they are delighted with it then you know you've done the right thing"* (D-DA220616-intvw)

Through client satisfaction and positive references, consultants and contractors would be able to tender for future work or seek repeat business with the same client. As summarised by the MC "*…you're only as good as your last job"* (D-GMc2808150-intvw).

NCT were evidently proud of the end result and creating a visitor centre *"that engages you emotionally"* in the battle. Indeed, the logo of the battle site was adopted as a brand to promote the work of the trust. The project manager for HEA also reported that Government ministers, who sponsored the project, were *"were certainly happy"* with the final project, as was the project manager herself (D-JR241114-intvw).

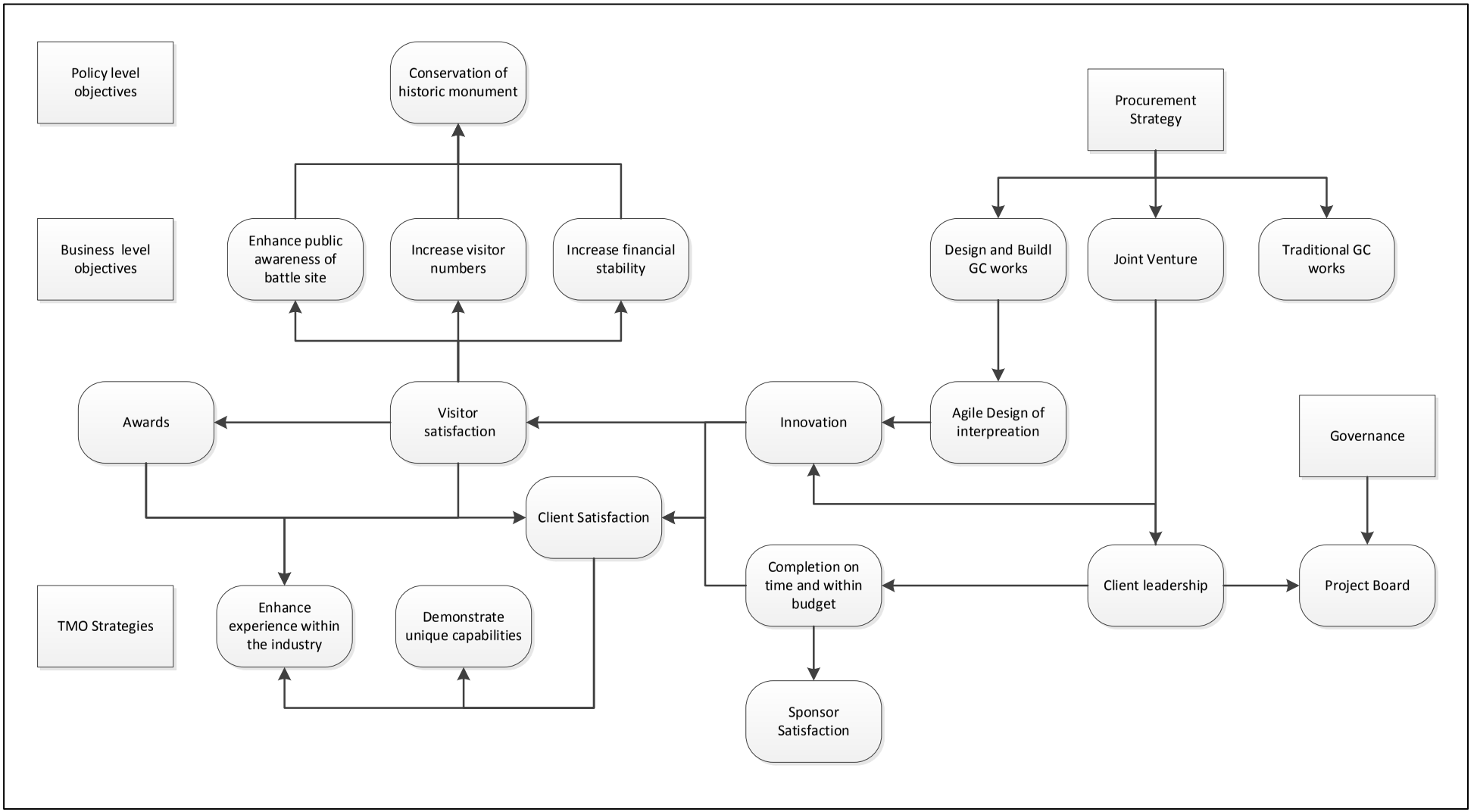

Figure 5.9: Causal Network Diagram Case D

5.5.9 General Findings from Case D

Report on the general findings of Case D are structured around the research questions discussed in Section 3.5. Findings are illustrated by a causal network diagram shown in Figure 5.9 that illustrate the relationships between events and actions within the case study.

5.5.9.1 Organisational Strategy

Through the replacement of the existing heritage centre, NCT was able to realise the policy objectives set out in its mission to communicate the significance of the battle site on a local, national and international scale (D-NCT0610-report), and conserve the historic monuments. The high profile project and Government funding enabled conservation of existing monuments whilst enhancing NCT's reputation in its role to protect and promote national heritage. As a result of high visitor numbers the new visitor attraction became financially sustainable and made contribution to other heritage sites owned by the trust.

The strategic objective of Central Government was also achieved. The public attention that the visitor centre received and the positive feedback from visitors supported the government initiative for investment into the countries heritage, whilst, also securing a manifesto promise to be complete in time for the 700th Anniversary. Moreover, Central Government's strategic agenda to *"showcase digital design talent…"* (D-TIC-041114-intvw) was realised through the global publicity that the new facility attracted.

Despite the creative differences between TMO members during the project, there were no conflicts between the organisational strategies of TMO members. As illustrated in Figure 5.9, through alignment with the client strategic objectives, TMO members were able to demonstrate organisational capability and attract further work. Moreover, the creation of an original immersive visitor experience heightened the profile of designers, which supported marketing initiatives for future contracts in the museum and visitor centre industry.

5.5.9.2 Mechanisms to maintain alignment

The joint responsibility between HEA and NCT to govern the project was successful. Evidence suggests that much of the success was due to the project management

processes implemented to manage the project. Besides the robust systems that were put in place, findings show that the effective leadership from the project managers was a contributory factor to the success if the project.

> *"…they were the people that we met with on a weekly basis, often daily, and they were the conduit through which decisions were discussed and made and escalated upwards, up the food chain, as it were, within each of their organisations"* (D-DA220616-intvw)

The project managers engaged with all TMO actors and ensured focus remained on the project objectives and integration of activities.

The main external influence potentially impacting on the project was the political environment at the time. As a result of the referendum, the project did receive significant public attention that put additional pressure of the TMO to complete the project by the deadline. But also, as a result of increased publicity, ensure quality was to a high level. However, the HEA and NCT project management ensured that the TMO were safeguarded against media pressures and allowed to focus on the project objectives. Despite this, it was recognised that the publicity surrounding the project supported the TMO objectives of market enhancement and raising public profile.

5.5.9.3 TMO Strategic Behaviour

The evidence finds that the fixed deadline did add to the tensions within the TMO. The dependency on other tasks, such as the external ratification of academic expertise, caused delays and frustration for the TMO. Tensions were augmented by the high profile media attention that the visitor centre was receiving. As discussed in Section 5.5.7.2, evidence suggests that actors were focused on the completion of individual tasks, rather than integration of tasks to create the visitor experience. This appeared to be higher within TMO organisations that involved creative activities, such as the CGI, and architecture.

As a consequence of the TMO strategic objectives to demonstrate individual competencies, the time made available for transition activities was reduced. The evidence finds that the leadership role project managers were critical in ensuring that tasks were integrated and the deadline for completion was realised.

5.5.9.4 Project Success

During the project, success was measured on opening of the visitor centre by the 700th anniversary commemorations. This was a publicised deadline and also a principal condition of Central Government sponsorship. Although complete in time for the official opening, the schedule was hindered by the quality success criteria and external academics that were not full-time members of the TMO. Due to the limitation and sources of funding, completion within budget was also a key measure of project success.

On completion of the project, the primary success criteria were measured on the public perception and visitor feedback. The, generally positive feedback, was collated through reviews submitted to social media sites, and demonstrated an increase satisfaction through the year, following the opening. The medium-term success of the project was also endorsed through the multiple awards the visitor centre and NCT received, as listed in Section 5.5.8. All TMO members recognised the significance of the awards and public ratification, for the individual strategies of enhancing reputation to increase their market position.

5.5.10 Conclusion to Chapter

This chapter has reported on the empirical findings from the data collected for each case study. Themes from each case have been discussed and presented in thematic matrices, contained in Appendix F. The main themes evolving from the findings, in relation to each research question are discussed as follows:

Research Question 1: *What are the varied organisational strategies being pursued within a temporary multi-organisation?*

The findings confirm that the construction projects, from the four cases, are implemented to realise the organisational strategies of the client organisation. The consistent theme is the existence of a strategic driver behind the decision to build. In Case Study A, the driver was a change in housing regulations that determined the existing residences to be no longer fit for purpose. Similarly, in Case Study D the driver was the deterioration of historic monuments and the recognition that the existing exhibition and visitor centre did not meet current tourist expectations. In Case Study C, the strategic driver was the need to reduce operating costs and increase operational efficiency. Whereas in Case Study B, the strategic driver was the longer-term need for

regeneration of the east end of the city. Findings also show that organisational strategies at the policy level provided opportunities for strategies at the business level. These included strategies for growth, as in Case Studies A and D, and for cost reduction and efficiency, as in Case Studies A and C. In case study B, the carriageway provided a wider contribution to the community, in terms of transformation and increased economic activity.

The findings show how TMO organisations aligned their strategies with the client organisation. Across all four cases, TMO members pursued competitive strategies that would be realised through successful implementation of the construction project. The consistent themes were repeat employment, market entry into specialist industries, and enhancement of current portfolio. Findings suggest that TM strategies were driven by financial uncertainties at the time of tender.

Research Question 2: *What mechanisms are implemented to maintain the alignment of a construction project with the client strategic objectives?*

and

Research Question 3: *How effective are these mechanisms in maintaining the strategic alignment of a construction project?*

The main mechanisms implemented by clients were the formal contractual arrangements within procurement strategies. Apart from Case Study A, findings show that the choice of procurement route was appropriate and effective. Within Case Study A, there was ambiguity over roles and responsibilities. In all cases a project board was also created to provide guidance and direction to the TMO.

The emerging theme within this research question was the need for a single point of contact between the project board and the TMO. In Case Studies B and D, the project board communicated directives through a project manager. Within Case Studies A and C, the project board, initially, directed the TMO. The findings show that under such an arrangement, the project suffered from the client complexity of the client organisation, with mixed directives and frustration of the TMO.

Research Question 4: *How do varied TMO actors pursue strategic objectives within a single construction project?*

Findings show that the TMO the strategy developed to pursue the varied strategic objectives within a single construction project is influenced by governance processes, procurement, client leadership, external TMO members and the varied strategic objectives being pursued.

Evidence suggests that a fixed deadline caused tensions with each TMO, the levels of which varied across the cases. A consistent theme in meeting the deadline was the effectiveness of the client leadership and the processes implemented to realise the project objectives. All TMO members were task focused, and integration of tasks was created through the leadership within each TMO. However, an emerging theme across all cases was the impact of partial TMO membership by sub-contractors, utilities, and external consultants, which did not work towards the project deadlines.

A further finding was lack of integration between the TMO and client personnel responsible for the transition. In case studies A and D, inadequate time was allowed for efficient transition, yet effective transition was required to realise the strategic objectives.

Research Question 5: *How do the varied actors engaged within a TMO measure the success of a construction project?*

Across all cases, the main measure of project success during construction was delivery by the deadline. Adherence to budget was also cited by some respondents. On completion of the project, end-user satisfaction was the primary measure of success. By measuring the level of end-user satisfaction, client organisations could assess the extent to which strategic objectives had been achieved. In all cases, end-user satisfaction (students, residents, employees, visitors) was the main determinates of project success. All TMO actors recognised that in order to realise strategic objectives of repeat employment, market entry into specialist industries, and enhancement of current portfolio, it was necessary to achieve the success criterion of client satisfaction.

The following chapter of the thesis syntheses individual, case study findings in the presentation of within-case analysis and initial conclusions from the study.

CHAPTER 6
CROSS-CASE ANALYSIS AND DISCUSSION

6.1 Introduction to chapter

In the previous chapter, the findings from each case were presented and discussed. This chapter discusses the findings through the process of cross-case analysis, based on the *a priori* themes identified within literature review, in Chapters 2 and 3, and *a posteriori* themes emerging from the findings in Chapter 5. Themes are explored and examined in relation to the research objectives of the thesis. Figure 6.1 provides an overview of the process of cross-case analysis within the chapter.

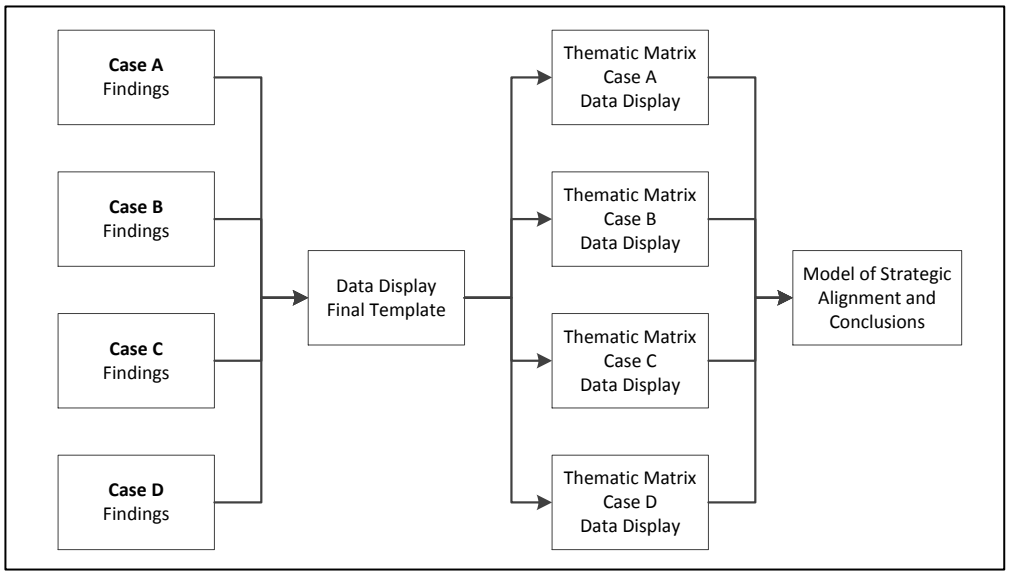

Figure 6.1: Process of Cross Case Analysis

The chapter begins by presenting a comparative outline of the relevant characteristics of the four case studies. This is followed by cross-case analysis and discussion addressing each research objectives of the thesis. The aim of this thesis is to investigate how varied organisations within a temporary multi-organisation seek to align multiple strategic objectives through a single construction project, and realise project success. A model of strategic alignment within a TMO explaining this phenomenon is developed from the findings and presented and discussed in Section 6.8. The chapter concludes with a summary of the findings, before the final conclusion chapter of the thesis.

6.2 Case Study Characteristics

For the purpose of data reduction, a summary of the characteristics of each case is presented in Table 6.1. Similarities and differences relevant to the findings are identified for comparison.

	Case Study A	Case Study B	Case Study C	Case Study D
Public Sector Client Type	Higher Education	Local Authority	Environmental Authority	Heritage and Conservation Agency
Project Deliverable	New Student Residence	New 4-lane Carriageway	New Office and Laboratory facility	New Tourist Visitor centre
Project Governance	Projects Managed through Project Board.	Projects Managed through a single business unit	Projects Managed through Project Boards.	Projects Managed through external agency and client project team
Procurement Strategy	Traditional	Design & Build	Design & Build	Traditional with Design and Build element
TMO Composition	Composite design team and MC	Joint Venture D&B Contractor	D&B Contractor with novated design team	Individual design team and MC

Table 6.1: Summary of Case Study Characteristics

- *Client Type:* As discussed in Section 4.4.1 all clients were public sector organisations and, therefore, publicly funded. The student residency in Case Study A was funded through the universities own financial capabilities. The carriageway in Case Study B was funded through the local authority budget. In case studies C Central Government was the main source of direct funding. Similarly in Case Study D, where sponsorship was received from Central Government and a Heritage Lottery Fund.

- *Project Deliverable:* Apart from Case C, where the new office and laboratory facility was built for the use of personnel within the Environmental Authority, other construction projects were commissioned for external stakeholder use. In Case A, the end users were students who had a prior contractual agreement with the university to rent accommodation within the new residency. In Case D, the visitor centre was open to the public, schools and interest group. In Case B, the new 4-lane public carriageway provided access to both public and privately owned land.

- *Project Governance:* All client organisations had established hierarchies consisting of multiple business units and departments. Directives were top-down through the corporate level and disseminated across the organisations. In case studies A and C, projects were initially managed through project boards created to govern the project. During construction a single point of contact between the board and the TMO was appointed. In Case Study C the project was managed through a functional business unit within the client organisation, with directives to the TMO being communicated through the client project management. In Case Study D, the TMO was managed, as a joint venture, by an external government agency and the client project management capability,

- *Procurement Strategy:* Apart from Case A, all TMOs were created under the competitive tendering process, as discussed in Chapter 5. In Case Studies B and C, the construction was procured under a design and build strategy. In Case Studies A and D the construction was procured under the traditional procurement route. The variation was the IG in Case Study D, which was procured under the design and build procurement strategy.

- *TMO Composition:* The composition of the TMO varied across the four cases. Within Case A, the TMO consisted of the client project management, the MC, and the PMC, with the architect being seconded to the PMC from an external architectural firm. Case Study B consisted of only the client project management team and the JMC organisation, which comprised of joint venture contractors and the design engineer. Case C also consisted of three organisations, including the client organisation. In this case, members of the design team were novated from the PMC organisation to the MC on award of the contract. Case Study D had the largest TMO with each discipline being represented independently, apart from the ID organisation, which comprised of an interpretation consultant and an interpretation design team. The client project management consisted of a government agency representative and senior management from the client team.

The characteristics of each case are considered when conducting the cross-case analysis and forming conclusions of the research.

6.3 Hierarchy of Strategic Objectives

Objective 1 of the study seeks to explore how multiple organisations within a TMO align varied strategic objectives through a single construction project. Within the context of a single organisational boundary there is the expectation that the objectives being pursued, at each level of a strategic hierarchy, will align with the corporate strategy of the organisation Morris and Jamieson (2005). This is illustrated in Mintzberg's (1994) model of strategic planning, shown in Figure 2.1.

In contrast, within the construction industry, the TMO operates across multiple organisational boundaries, and therefore, seeks to align the varied levels of multiple organisational strategies, through a single construction project. This complexity is analysed through the theoretical lens of the strategic hierarchy, as discussed in Section 2.4. The strategic hierarchy of each case is presented in Table 6.2, with comparison of strategic objectives in Section 6.3.2. This is followed by a discussion of the theoretical implications of the findings in Section 6.3.3.

6.3.1 Hierarchy of Strategic Objectives within each case study

Drawing on the models of Archibald (1988) and Youker and Brown (1998) as discussed in Section 2.7.2, the hierarchy presented in Table 6.2 identifies three levels of organisational strategic objectives that were pursued within each case study. These include TMO strategic objectives, as well as, client objectives.

- Level 1: Policy objectives define the intended corporate strategy of the organisation, in terms of industries and markets in which it competes (Andrews, 1971). Client strategic objectives at this level, derive from the organisations mission, and explain the fundamental rationale for the construction project. The policy objectives of the TMO member organisations determine the long-term strategy and direction of the organisation.

- Level 2: Business objectives determine how the policy objectives, at the corporate level, are achieved through implementation of the construction project. Strategic objectives at this level focus on competition within a particular market segment (Beard and Dess, 1981). For, both client and TMO, it is through the business objectives, that the policy level objectives are realised.

- Level 3: Operational objectives describe the project deliverables. It is through the success of the implementation of the operational strategies, that the business level objectives and the policy level objectives of the client and TMO are realised.

The hierarchy of strategic objectives within a TMO, shown in Table 6.2, illustrates how business level objectives within the client organisation are pursued to achieve the policy objectives at the corporate level. The operational objectives of the construction project, established at level 3, is implemented to realise the business objectives of the client organisation.

As shown, in order to pursue the policy objectives of the consultant and contracting organisations, TMO member organisations align their business objectives with the operational objectives of the construction project. Strategies across all organisations are, therefore, realised through the implementation of the project, as demonstrated in the comparison of case studies within the study.

	Case Study A			Case Study B			Case Study C		Case Study D		
Client	**Client**			**Client**			**Client**		**Client**		
Level 1: Policy Objective	Maintain Competitive position and reputation of the university			Regenerate East End of the city			Improve services whilst reducing operating costs		Conservation of the historic monument		
Client Level 2: Business Objective	Grow international student numbers	Contribute to the universities financial position	Reduce maintenance of university estate	Increase economic activity within the East End	Support development of the community	Provide access to the Games	Relocate staff to a central facility	Create new working practices synergy	Enhance public awareness of battle site	Increase visitor numbers	Increase financial stability
Level 3: Operational Objective	Provide high quality student residences			Provide carriageway for greater access to the East End of the City and implementation of flood relief system			Provision of central laboratory and office facility		Provision of new tourist visitor centre and innovative interpretation		
TMO Level 2: Business Objective	Enhance experience within the education sector	Secure repeat business with the client		Establish reputation in local market	Establish reputation in local market		Continue to work with existing client	Protect local market	Enhance experience within the museum industry	Demonstrate organisational capabilities	
		Seek opportunities for survival in current market		Secure repeat business with the client	Work on larger projects				Demonstrate organisational capability		
TMO Level 1: Policy Objective	Seek opportunities to maintain and increase competitive position	Market entry in the education sector		Business expansion in the UK market	Increase business opportunities		Maintain competitive position	Market entry in the laboratory and science sector	Maintain competitive position	Maintain competitive position	
					Make cost efficiencies on contracts			Increase business opportunities	Enhance competitive position and reputation		
	Consultant	**Contractor**		**Consultant**	**Contractor**		**Consultant**	**Contractor**	**Consultant**	**Contractor**	

Table 6.2: Hierarchy of strategic objectives within a TMO

6.3.2 Cross-case synthesis of strategic objectives

In Case Study A, the policy objective of the new residencies was to maintain the competitive position of the university. As discussed in Section 5.2, this had been threatened by the introduction of new HMO regulations that determined the existing residencies did not meet required standards, and would reflect negatively on the reputation of the university if new students were not offered the opportunity of on-campus accommodation. The competitive position of the university was pursued through the level 2 strategy to grow the intake of international students, and the offering of services for hospitality and conferences. Strategic objectives were achieved at level 3, through the deliverable of a high quality student residency. By offering student accommodation of a higher quality also enabled the Department of Hospitality Services to support the universities financial position through higher rental charges, and enabled the Department of Estates to reduce maintenance costs through the implementation of a sustainability strategy, in support of strategic objectives at level 2.

The level 1, policy objectives, of both, the PMC and MC was to survive in the current economic climate that was facing difficulty as a result of 2008-2013 financial crises. This was pursued through market entry into the higher education sector, in which the construction of student residencies was one of the few growth areas in the construction industry at the time (KnightFrank, 2011). Through alignment with the business objectives of university, in the delivery of a high quality student residency, the PMC would be able to expand their experience to attract further business. Whereas, the level 2 strategic objective of the MC, was to develop a working relationship and partnership with the university, in order to secure future contracts as part of a wider estates strategy.

As discussed in Section 5.3, the level 1 policy objective of the local authority, in Case Study B, was to support a major regeneration initiative of the east end area the city, that was developed fifty years prior. Regeneration was pursued through the level 2 strategic objectives of increasing economic activity of the regeneration area and supporting community development. The deliverable of the four-lane carriageway improved access to the regeneration area, which in turn, attracted new business. The carriageway also provided access to venues for hosting of the Games. This supported the level 1 policy objective to enhance the reputation of the city for tourism and commerce, thereby increasing economic activity.

The level 1 policy objectives of the JV contractor were aimed at increasing business opportunities and making cost efficiencies through reduced expenditure on projects. These were pursued at the business level through focus on larger construction contracts and on attracting more local business, thus saving on logistics. The level 1 policy objective of the European design-engineering firm was to expand its business within the UK. Successful delivery of the carriageway supported the level 2 strategic objective of seeking repeat business from the Local Authority.

In Case Study C, the level 1 policy objective was to improve services whilst reducing operating costs, as a result of reduced funding and the subsequent impact on the core operations of the business. The level 2 strategic objective was to relocate personnel from varied locations to a central facility, thus, making costs efficiencies through lower rental of facilities, reduced maintenance and unnecessary duplication of equipment and resources. The level 3, operational objective was implemented to deliver a new laboratory and office facility, whereby an environment would be created that enabled efficient sharing of equipment for new working practices and synergies to develop.

The PMC and architect, in Case Study C, had a previous working relationship with the EPA and were seeking to maintain this through future contracts. The policy objective was therefore to maintain their competitive position with the public sector client through the continuation of work. The level 1 policy of the design and build MC was to enable market entry into the specialist laboratory sector and to maintain their competitive position. This would be achieved at level 2, by protecting their position as the main contractor for refurbishment projects within the retail park, and securing the contract for construction of the new laboratory and offices with the park.

In case Study D, the battle site formed part of a portfolio of projects managed by the NCT. The level 1 policy objective of NCT was to conserve the historic monument. This was achieved through a level 2 strategic objective to raise public awareness of the battle site. Through increased visitor numbers and financial stability, NCT would be able to sustain the conservation of the historic monuments. The deliverable at level 3 not only included the new visitor centre, but also an innovative and unique interpretation that would attract wider and younger visitors. Through the uniqueness of the visitor experience and the media attention that project attracted, NCT were able increase visitor numbers and ensure continued conversation of the monuments at the battle site.

Similar to the other case studies, the policy 1 objective of the consultants and contractor was to maintain their competitive position. In the case of the ID organisation, the policy objective was to enhance their competitive position within the specialist 3D market. By pursing level 2 strategic objectives to demonstrate the unique design capabilities of the IC, they were able to improve their reputation and increase market position. Similarly, the high profile attention of the project enabled the architect and the MC to enhance their experience and demonstrate capabilities, thus, maintaining their competitive position in the museum and visitor centre market.

6.3.3 Alignment of strategic objectives

Existing studies investigating the alignment of strategic objectives with projects, consider only the levels of strategy within the boundary of a single organisation (Archibald, 1988; Kerzner, 2001; Morris and Jamieson, 2005). The hierarchy in Table 6.2 acknowledges the strategic intentions of all TMO member organisations, and demonstrates how the operational objectives supports the strategic objectives of both, the client organisation, and the consultant and contractor organisations participating in the project. Alignment is achieved when all TMO member organisations are able to realise individual strategic objectives through implementation of the construction project.

The findings demonstrate how clients develop and implement projects to realise unique strategies, of which the construction project is one component. As illustrated in Table 6.2, emergent opportunities, at the business level, also evolve as a result of the decision to invest in the construction project. This includes contribution to the financial strategy in Case Study A, development of new working practices in Case Study B, efficient transportation and flow to the Games in Case Study C, and, consistent with Mintzberg and Waters' (1985) and Mintzberg's (1978) proposition that organisational strategies emerge unintentionally during the event, a new branding strategy that emerged as result of the success of the visitor centre, in Case D.

In contrast to client organisations, where strategy is achieved through fit between internal elements, TMO consultant and contractor organisations align their business strategies with the external environment. Within the study, the policy and business objectives of the TMO member organisations were based on sustaining a competitive advantage within the market. At the time of the study, the 2008-2013 financial crises

had a significant impact on the construction industry, resulting in construction organisations pursing survival strategies. Organisational strategies of TMO members were, therefore, formulated in line with the conditions of the competitive environment. These included diversification into specialist market groups and development of partnering arrangements with public sector clients.

In contrast to the assumptions made in the literature (Morris, 1982; Jones and Lichtenstein, 2008), the study did not find conflict between the strategic objectives within the TMO. Instead, analysis reveals that the intended, long-term, strategic objectives of all TMO organisational members were aligned through the operational objectives of the project. Consultant and contractor organisations were dependant on the successful delivery of the construction project for individual strategies to be realised. Despite this, TMO member organisations did not act as *'obedient servants'* to the client organisation (Artto *et al.*, 2008). The short-term priorities of TMO members changed in accordance with the conditions of the external environment and the threats to individual, business level objectives. As a result, actors pursued courses of action that balanced the short-term objectives of their representative firm, with the operational objectives and delivery of the project objectives. The salient finding is that, at the start of the project, the strategic objectives of all TMO members were aligned. The difficulties arose through environmental changes, and actions taken by TMO members to maintain alignment.

6.4 Governance of temporary organisations

The second objective of the study explores the effectiveness of mechanisms implemented by the client organisation to maintain alignment of strategic objectives. Mechanisms are examined through the lens of project governance. This includes the analysis of procurement strategies and contractual relationships that determine the formal governance mechanisms, and the effectiveness of governance structures created by the client organisation to ensure that the strategic objectives of the project are realised.

6.4.1 Cross-case synthesis of procurement strategies

In Case Study A, the decision to adopt the traditional procurement strategy was perceived by the client as the main cause of failing of the project. Incomplete information at the tender stage enabled the MC to submit a low tender price and seek

additional costs for items not included in the tender documentation (Curtis *et al.*, 1991). As a consequence, the project suffered from significant cost overruns and delays by the MC in securing sub-contractors at the reduced costs. Despite this, the traditional procurement process did support the strategic objective of the Department of Estates to reduce the maintenance of the estate. This was achieved through the nomination of specified materials and suppliers to be used in the construction.

Case Study D also used a tradition approach to procure the services of the MC for construction of the visitor centre. Similar to Case Study A, this also suffered delays as a result of securing sub-contractors and resources for particular work packages. Due to the technical nature of the interpretation and the design process, the CGI was implemented under the design and build procurement strategy. This empowered the IG organisation to be innovative and deliver an interpretation that aligned with the strategic objectives of NCT. Alignment was maintained through the approval process of academics employed to advise on the historic accuracy of the IG. However, delays in receiving academic approval did have an impact on the schedule and delivery of the operational objectives.

In Case Studies B and C, the design and build procurement strategy was adopted in order to reduce the risk of cost over runs for the public sector clients. In Case Study B, alignment of the design of the carriageway with the strategic objectives of the regeneration programme was maintained through the production of a preliminary design by the Department of Technical Services and on-site attendance by the client project manager. In Case Study C, the design of the layouts to facilitate new working practices and the requirements of each department using the facility were maintained through the novation of the design team from the PMC at pre-tender stage, to the design and build MC at the construction stage.

Analysis concurs with Rowlinson (1999) and Taylor *et al.* (1999) that no single approach to procurement is suitable for all contingencies. Although, it was found that in cases studies B and C, where a design and build procurement strategy was implemented, the projects completed either on time or earlier than planned. Under the design and build arrangements, it is the contractor that has greater control over the TMO activities and implementation of operational objectives. In contrast, within the traditional procurement strategy, the client has greater control over the final design. This is of

importance when the strategic objectives are dependant on the design of the new facilities, such as the maintenance strategy in Case Study A and innovative design in Case Study D.

The findings imply a need for project clients to have sufficient knowledge of the procurement processes when embarking on a construction process. This contradicts RICS's (2013) suggestion that the traditional route is suitable for inexperience clients. In comparing case studies, findings show a greater need for client management when the traditional procurement strategy is pursued than that of the design and build procurement strategy, where the directive of the TMO falls under responsibility of the design and build contractor. It is therefore argued that the traditional procurement strategy either requires suitable knowledge and client experience to support strategic objectives, or the appointment of a capable project manager, as demonstrated in Case Study D.

6.4.2 Project Governance Structure

Findings support Cherns and Bryant's (1984) fifth proposition, listed in Table 3.2, that the actual performance of the TMO is determined more by the capabilities of its component organisations and their coordination than by the form of contract adopted in the procurement strategy. Focusing on coordination, the governance structure of each case is analysed in terms of the effectiveness in ensuring that the project meets the goals and expectations determined by the varied stakeholders (Turner, 2006), and maintaining alignment of the client organisation's strategic objectives (Müller, 2009).

In Case Study A, project governance was provided through a multi-stakeholder project board comprising of end user representation and varied stakeholder departments across the university. The project board, actually, had little formal authority over the project, and was dependant on the University executive and the Court of the University to approve appointments of contractors and make decisions pertaining to costs. The attempt by the project board to align the project schedule with the meetings of the Court was not successful. The lack of flexibility in the formal governance arrangement of the university resulted in the documents being issued for tender with incomplete design information.

Conflicts between strategic objectives were also evident between project board members. The recommendation of the Department of Estates to pursue the traditional procurement strategy and enforce a strict specification of nominated materials and suppliers, supported the strategic objective to reduce the maintenance burden, but incurred additional costs, and contributed to the delays in completion of the residency. This had an impact on Department of Hospitality and Conferences who were seeking cost reduction and access to the facility to begin the preparations for students arriving. Also with the Department of Student Services who were seeking high level of student satisfaction through aesthetics, comfort and finishes within the new residencies.

Similarly, in Case Study C, a project board was established to provide guidance and direction to the TMO in the refurbishment of the laboratory and office facility, whilst a second project board was established to manage the relocation of personnel in the client organisations. Findings reveal that ambiguous authority and a lack of communication between the boards resulted in frustration for both, the TMO and end users, whose requests for specific layouts were not fully delivered as expected. As discussed in Section 5.4.5, the inefficiency of having two project boards was later recognised and subsequent action was taken to merge the two boards into one. A project manager was also appointed to take responsibility for the direction of the TMO, which was welcomed by TMO actors, as it enabled focus on project objectives without involvement in strategic objectives of the client organisation. This is consistent with point 8 of Cherns and Bryant' s (1984) propositions, that TMO members have a preference for dealing with a single client representative within whom all politics of the client system can be contained.

In contrast, within Case D, the project board consisted of senior personal from NCT, HEA as the Government representative, and HLF as one of the funding organisations. The responsibility of the project board was to ensure conservation of the historic monuments in the interest of the public and the country. An HEA project manager was appointed to deliver the operational objectives of the project, as part of the Government funding agreement. The role of the project manager was to oversee the TMO in completion of the project by the 700th anniversary of the battle and report progress to the project board. TMO actors were directed by a single client entity consisting of an HEA project manager and a project manager from NCT. This guaranteed focus on

operational objectives and safeguarded the TMO from influence and involvement in the political and strategic issues surrounding the high profile conservation project.

Similarly, within Case Study B, the project board, consisting of representation of all interested stakeholders within the regeneration programme, governed the pursuit of strategic objectives. The operational objectives implemented by the TMO were managed through the capability of a distinct business unit within the Local Authority. Within this arrangement, TMO actors engaged only with a single client representative who reported to project board. This enabled on-site decisions to be made quickly and efficiently without ambiguity, and was preferred by TMO organisational members.

Consistent with the findings of Ruuska *et al.* (2011), across all cases, governance mechanisms within the TMO evolved during the project lifestyle. This was despite formal governance structures and the formation of project boards. In Case Studies A and C, where the project boards were not effective, the TMO developed a process of self-regulation, whereby project related decisions were made by TMO actors in order to ensure that the project progressed. This was a particular occurrence where the TMO received mixed and ambiguous directives. In Case Study B, self-regulation evolved as a result of the co-location of actors. Project decisions were made quickly, at a local level, which ensured that the project progressed accordingly. Ambiguity was also removed, with reports of strong integration between actors.

Also consistent with Ruuska *et al's* (2011) findings, the strategic objectives of key project actors appeared to take priority over other actors within the TMO. In particular when actor had a creative role within the project. In Case Study A, members of the project board focused attention on the architect to implement individual strategic objectives. Whereas, in Case Study D, key actors were defined as the interpretation consultants responsible for the design of the virtual exhibition and the architect, who were both reported as requiring additional attention by the client project management. It could therefore be concluded that, within a TMO, the priority of actors will vary in accordance with the strategic objectives of the project, but would appear to focus on the design capability.

6.4.3 Client Complexity

Ruuska *et al.* (2011) and Bekker (2014) also highlight the impact of stakeholder complexity on the governance of construction projects. Within the study the impact is greatest in Case Studies A and C where the multi-stakeholder project boards result in a pluralistic client body (Thomson, 2011). Under such conditions, competition emerges between organisational departments to manoeuvre the operational objectives of the project in favour of their own strategic requirements. This creates a situation where departments and SBU's are, not only, competing for resources and attention from the corporate level (Gupta and Govindarajan, 1986), but are also competing for prioritisation from the TMO to realise the strategic objectives of individual business level departments. Conflicts emerge between stakeholder departments, resulting in the TMO receiving mixed, and often opposing, directives by different client representatives. Within Case Study A, TMO actors were explicitly being told to favour the priorities of certain departments over others. In Case Study C ambiguity from within the client system resulted in frustration for TMO actors, with the risk of delays in development and progress of the project.

In contrast, within Case Studies B and D, a project manager was appointed to direct the TMO from the start of the design and construction phases, consistent with the structural arrangement in, both, Archibald's (1988) and Kerzner's (2001) hierarchy of objectives. In projects where a project board is created for governance, the project manager acts as the conduit between the multi-stakeholder project board and TMO actors. Thereby, mitigating the impact of pluralistic client complexity. Without the role of a single point of contact between and the project board and TMO actors, self-governance of the TMO, to ensure focus on the operational objectives of the project, becomes more evident.

It is relevant that in Case Studies A and C, project managers were later appointed by the client following the recognition that projects were not performing as planned. The findings show that formal governance structures are more effective when there exists a single point of contact between the client and the TMO. The authorisation of a project manager, to communicate the client's strategic objectives, ensures clarity of the project requirements, faster decision-making and supports TMO performance.

6.5 Leadership of Temporary Multi-Organisations

Related to project governance is the leadership of each TMO. The study finds a link between client leadership and the TMO strategy pursued to realise the operational objectives of the project. Findings show that client leadership influences the strategic behaviour of the TMO. The leadership styles of each client project manager, appointed to direct the TMO, are analysed through the characteristics of transformational and transactional leadership styles (Bass, 1990), as discussed in Section 3.5.

The case studies provide examples of, both, task-focused transactional leadership styles and person-focused transformational leadership styles, as presented in Avolio and Bass's (1991) full range leadership model. Consistent with Bryman *et al's* (1987b) proposition that, due to the limited duration of construction projects, leaders tend to be more task oriented than people focused, the findings of the study suggests that all client project managers were task-orientated and focused on completion of the task within the parameters of the project objectives. However, analysis also reveals the use of transformational leadership approaches to motivate TMO actors.

In case study B, TMO actors perceived the client project manager as highly supportive. The emphasis of the client project management, from the start of the project, was to establish a strong team-working environment that would allow focus on the project objectives. On site attendance enabled continuous support of the TMO and enabled issues to be addressed quickly and efficiently. This was recognised by all actors who reported of strong integration and a good team atmosphere amongst TMO actors.

Similarly, in Case Study C, the client project manager was also considered supportive in his attitude towards the TMO. He attended all meetings, provided immediate solutions to potential issues and demonstrated commitment in supporting the TMO in the achievement of the operational objectives of the projects. This included the implementation of a change control system to safeguard TMO actors against mixed directives from the project boards, thereby, enabling focus on the project tasks. As a consequence, TMO actors spoke highly of the client project manger and were explicit in the significant progress made on the project, following his appointment.

In Case Study D, the HEA project manager ensured mechanisms were in place to enable the TMO to remain focused on the task. To protect the TMO, the project manager

deflected the, on going, political and media attentions surrounding the visitor centre, and ensured that the required support was given to TMO organisations to achieve the operational objectives. The vision of the project was clearly communicated by the client, and TMO actors were motivationally inspired to deliver a unique visitors centre that was attracting significant publicity. Whereas there were reports of *'personality clashes'* as a result of creative differences between actors, the acknowledgement of the creative capabilities of individuals, understanding of the individual needs of actors, and the enforcement of the project vision, ensured that TMO actors remained focused on the operational objectives of the project.

In contrast, the client project manager in Case Study A, exerted pressure on the TMO to achieve the programme deadline through coercive behaviour. This included abrasive interactions with TMO actors and openly criticising the capabilities of consultants and contractors during client meetings. Consistent with Cherns and Bryant's (1984) point in referring to the impact of conflicts and behaviours within the client organisation, the client behaviours from within the university, resulted in breakdowns in communication between the client and TMO organisations and, in general, demotivation of actors on the project.

Case Study A demonstrates the difficulties and consequences of adopting a transactional leadership style within the context of TMO. As observed by Tyssen *et al.* (2014), the challenge for leaders of temporary organisations is that they have little de facto authority. Within the case, the client project manager had no reward or punishment in which to transact with, in exchange for TMO performance. In response to the a symbolic transaction, in the form of performance in exchange for non-criticism, TMO actors deferred to the conditions of contract established within procurement strategy. Thus, negating the authority and, therefore, the leadership of the client project manager.

Findings also reveal challenges for transformational leadership styles. The limited duration of the construction project does not allow for transformational leadership interactions to develop, although, the co-location of actors in Case Study C enabled deeper social interactions to take place. However, there was evidence of transformational leadership through inspirational motivation, establishing a team spirit and expressing shared values (Bass, 1990), across the case studies. This was evident in case studies C and D, where actors understood and shared the values that the project had

on the wider stakeholder community, as a result of the client leadership. Also, within Case Studies B, C and D, actors spoke highly of the client project manager, whereas in Case Study A, reports were decisively negative.

6.6 TMO Strategy

Objective 3 of the study explores the strategy of the TMO in the pursuit of the varied strategic objectives to be realised from a single construction project. This is examined through the strategic behaviours and interaction of TMO actors in response to the procurement strategies, governance mechanisms, client complexity, client leadership, and other external factors. Strategic behaviour is analysed through the lens of Lundin and Soderholm's (1995) theory of temporary organisations, which generalises that actors within a temporary organisations will demonstrate particular behaviours, as discussed in Section 3.3. Consistent with the theory, the strategic behaviour of each TMO is analysed under the themes of *time, task, team* and *transition.* Cross case synthesis is made within each theme, and between the assumptions made within the literature on temporary organisations and findings from the analysis.

6.6.1 Time

As discussed in Section 3.3.1, the first perspective in the theme of *time*, views temporariness as being short in duration, due to the requirement for immediate goals (Palisi, 1970). This perspective is analysed from the potential impact of delays in the project schedule and the effect in the realisation of strategic objectives, as a consequence of project deadlines not being achieved.

The findings show that there was awareness among all TMO actors that completion of the project by the set deadlines was essential for the realisation of client policy objectives. Failure to meet deadlines would also impact on the MC in Case Study A and the DE in Case Study C, whose strategic objective was to seek repeat business with the client. In Case Study A, where the programme had slipped extensively, completion by the revised deadline of the new semester, took priority over cost and quality project objectives.

In each case, the schedule for completion was considered *'challenging'* by TMO member organisations. However, in recognising the strategic importance of meeting deadlines, all projects had time contingency built into the schedule, in order to mitigate

risk to the client strategy, including Case Study A. Apart from Case Study B, which finished one week early, all projects suffered delays in completion. In analysing the reason behind schedule slippage, it was found that many of the problems concerning delays originated from factors within the client organisation. Findings are consistent with Cherns and Bryant's (1984) ninth point that problems concerning design changes, delays and difficulties during the construction phase have their origins in the unresolved conflict within the client organisation.

In Case Study B, the project suffered schedule delays as a result of design changes and additional requirements from the end user. In Case Study D, the time taken for academic experts to advise on the historical accuracy of the interpretation caused delays in the progress and delivery of the 3D interpretation. In Case Study A, the attempt to align the project schedule with the formal university governance arrangements resulted in delays in completion of the design. Also, as a consequence of client complexity and conflict between the strategic objectives of representative departments on the project board, changes to the design were made late into the project schedule.

The study finds that the primary external factor for project delays was the dependency on organisations that only have partial engagement in the TMO. As a consequence of the economic climate at the time, the MC in Case Study A was unable to secure the availability of sub-contractors at the rate submitted to the client. The study finds that sub-contractors need continuity of work to ensure sustainability. However, this is dependent on the efficiency of the project management and other trades to complete dependant works before the sub-contractor can start (Eccles, 1981). As such, timeframes and availability of specific sub-subcontractors may not align with the operational objectives of the project, especially, when changes in the project schedule occur. Similarly, in Case Study B, construction was delayed as a result of the time taken for utility providers to install services. As found in the study, utility suppliers do not operate within the boundaries of a single TMO, rather they operate across multiple TMOs at any given point in time, and therefore only work to the required conditions of contract.

The second perspective within the theme of *time* views temporariness as the relatively short duration of the participation between actors involved in a project (Lanzara, 1983). It is proposed that as a consequence of the limited life span of a temporary organisation,

actors do not anticipate future interaction with each other beyond the imminent deadline of the project (Bennis, 1965; Goodman and Goodman, 1976). As such, concern will be on the effective completion of tasks, rather than developing long-term efficiency of project processes (Saunders and Ahuja, 2006) and the development of long-term relationships with other TMO actors (Bakker *et al.*, 2013) .

Across the case studies, TMO member organisations were employed under specified conditions of contract to provide particular services or resources over a defined period, at certain stages of a project. Consequently, the primarily concern of TMO actors was the successful accomplishment of the tasks they were contracted to deliver, by the set deadline. Within Case D, focus on individual tasks resulted in tensions between varied disciplines within the TMO, with the need for the project manager to adopt stakeholder management practices. Within Case Study A, there were conflicts between the architect and the engineer over the design strategy of the residences and also between the PMC and MC organisations. Despite this, actors reported that tensions and conflict were considered normal behaviours within the construction industry, especially when there was pressure on time to jointly deliver a specific output.

The findings of the study supports the proposition that TMO actors primary concern will be on completion of project tasks over the development of interpersonal relations (Bakker, 2010). This was not as a consequence of the limited duration of the TMO or the anticipated future interactions with TMO members (Bennis, 1965; Goodman and Goodman, 1976), but as a result of contractual obligations, delegation of responsibility and the actors necessity to realise the operational objectives of the project in order to support the strategic objectives of their own organisation.

6.6.2 Task

The second theme in the research of temporary organisations considers the complexity of *tasks* executed by the TMO. As discussed in Section 3.3.2, the concern within the literature is the uniqueness of tasks performed by the temporary organisation and the difficulties of repetition (Goodman and Goodman, 1976). However, within the construction industry, optimization in the planning of repetitive activities can lead to efficiency in the scheduling and costs of a project (Hyari *et al.*, 2009). Indeed, infrastructure projects and housing programmes are characterized by the repetition of activities, as the elements of construction are repeated from one unit or location to

another (El-Rayes and Moselhi, 1998). In Case Study A, a reason for cost over runs and delays was cited by the client project manager as a lack of modularisation within the design and construction of new student residency, which would normally be expected.

In contrast to the propositions, within the temporary organisation literature, that unique tasks creates uncertainty in the project (Gann and Salter, 2000; Prencipe and Tell, 2001), and inhibits performance (Lundin and Soderholm, 1995), analysis reveals that the competitive strategy of TMO organisations was the ability to demonstrate capability in performing unique tasks. In Case Study B the complexity of the design and construction of the flood relief tunnel supported the JV contractors strategic aspirations to attract larger contracts. The unique interpretation in Case Study D would provide a competitive advantage for the CGI consultant within the museums and visitor centre market segment. Similarly, in Case Study A, the participation in the residences project enabled differentiation into the higher education sector for the PMC. Whilst, the construction of unique laboratories, in Case Study C, enabled entry into the specialist science sector for the Design and Build MC to realise their strategic objectives.

6.6.3 Team

The main concern within the theme of *team,* was the lack of time available for confidence building activities to support the integration and development of trust between the diverse actors within a temporary organisation (Meyerson *et al.*, 1996). As discussed in Section 3.3.3, the concept of *'swift trust'* follows from the notion that actors have not worked together previously, and act as if trust was inherent from commencement of the project (Saunders and Ahuja, 2006). However, participants across all case studies confirmed that, due to the high level of mobility of labour in the construction industry and the relatively small network of construction specialists, construction professionals were frequently engaged within the same TMO, and fully expected to work together in the future. In Case Studies B and C, consultants and contractors reported that they had worked on previous contracts for EPA. Also, in Case Study D, the architect had conducted previous work for HEA. Furthermore, NCT and HEA had been involved in other projects together. As a result of the high mobility, social networks of actors, and membership of professional organisations within the construction industry, structural embeddedness (Nahapiet and Ghoshal, 1998b) was evidence between component TMO organisations.

The notion of swift trust is therefore questioned within the context of TMOs. Consistent with Jones and Lichtenstein's (2008) proposition, the study finds that, due to the temporal nature of construction projects and the high mobility in the construction industry, it is common for actors to have prior working relations with other TMO actors. Analysis also supports the proposition that prior working relations between actors within a TMO can enhance project performance (Rowlinson, 1988; Shoesmith, 1996). In case studies B and C where TMO actors had worked together previously, participants reported of a high degree of integration between TMO members.

A common theme across the contracting and consultant organisations within the study was also the desire to establish partnering arrangements. In Case Studies A and C, both, the MC and PMC advocated the need for partnering arrangements to maintain the strategic objectives for repeat business and future contracts within the market sector, consistent with Latham's (1994) report. Through the development of partnering networks, the strategic objectives of repeat business with the same client would be achieved, thereby, supporting the policy objectives of the TMO organisation.

6.6.4 Transition

As discussed in Section 3.3.4, Lundin and Soderholm's (1995) framework proposes two meanings for the term of *'transition'*. The first refers to the distinctive change to the permanent organisation as a result of the project. The second meaning focuses on the perceptions of causal relationships, and how to proceed to the *"end state"* (Lundin and Söderholm, 2013). This study investigates transition through the lens of the second meaning. Specifically, it considers the transition processes that occur between the permanent and temporary organisation (Burström and Jacobsson, 2012).

In Case Study A, delays in the project schedule did not allow adequate time for an efficient transition processes between the project and the permanent organisation to take place. The new residency was still in construction as students began to arrive. There were also reports of initial concerns about quality as a consequence of the rush to complete the facility. A result of the late delivery of the project, there was additional pressure on the Department of Hospitality and Catering, and Student Services, to ensure the accommodation was ready to receive the students. Findings suggest that the absence of time for transition was a contributory factor in the poor attitudes towards contractor and consultant organisations, post completion.

Similarly, delays in construction and installation of the interpretation had an impact on the transition process in Case Study D. As a result of the schedule slippage, personnel responsible for the management of the visitor centre had less time to decommission the system and operationalize the facility. However, as a contingency for possible delays, a 'soft opening' was planned two months before the official 700th anniversary commemorations to allow for '*operational fine-tuning'*, prior to the official opening, consistent with Burström and Jaccobson's (2012: 414) findings.

In contrast, within Case Studies, B and C, the transition processes were implemented in parallel to the construction of the carriageway and facility. In Case Study B, key stakeholder members of the project board were able to plan related projects within the regeneration programme, in accordance with the progress of the carriageway. Within Case Study C, the project board, specifically established to manage the migration of EPA personnel to the new facility, implemented the transition process. Despite difficulties of having two governing two boards directing the TMO as discussed in Section 5.4.5, a dedicated board for the transition ensured a reasonably smooth relocation of personnel from other locations.

The findings of the study provide an alternative to Jacobsson *et al's* (2013) perspective of transitory units within permanent organisations, which questioned as to whether the temporary organisation can really exist detached from the permanent organisation. Jacobsson *et al.* (2013) propose that within the intra-organisational perspective, the temporary organisation is formed from personal from within the permanent organisation that remain involved in the project through to the transition. However, within the context of TMOs, there is little overlap between the permanent and temporary organisations, with the permanent organisation providing only guidance and directives to the TMO, as demonstrated across the case studies.

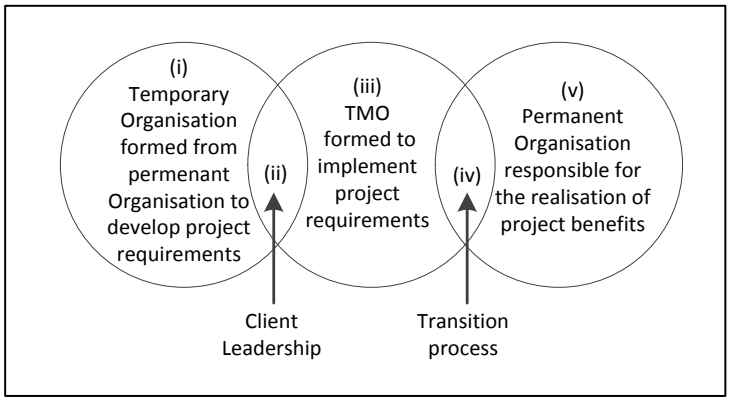

Figure 6.2: Transformational process from temporary to permanent organisation

Developed from on the findings of each case, Figure 6.2 illustrates the transformation between the permanent and the TMO across the cases studies. Consistent with Jacobsson *et al.* (2013), a subset of the permanent organisation (i) is formed as a temporary organisation to develop the strategic requirements of the project. This is developed either within a single business unit, as in case studies B and D, or involves internal stakeholders from across the organisation, as in case studies A and C. Once the decision to build is confirmed, the permanent organisation will begin to form the TMO. In Case Study A, the university employed the expertise of the PMC to advise on and manage the procurement process. Within case study C, the architect was employed to support the application for funding. In Case Study D, the HEA project manager led the TMO as a provision of Government funding for the new visitor facility. This is shown at point (ii), in Figure 6.2, as the first overlap between the permanent and temporary organisations.

The TMO is formed when responsibility for implementation of the operational objectives of the project are officially transferred from the client organisation to the temporary multi-organisation, shown at point (iii). The overlapping organisational boundaries between permanent and TMO, at point (ii), constitutes the client project management responsible for providing leadership and directive to the TMO. It could also involve active members of the project board. But, as demonstrated in Case Studies A and D, the integration between project board members and the TMO tends to be weak.

The TMO has greater responsibility from the point of agreement of the contract and work starting on site. Within the case studies, members of the permanent organisation

involved in the initiation of the projects remained within the permanent organisation, with the client project manager remaining within the TMO. Inevitably, membership of the TMO will cease to exist, as tasks are complete and actors return to their own permanent organisation. It is at this point (iv) that the second overlap occurs and the transition process begins. This involves operationalization of the facility for occupation or use by the permanent organisation.

It can therefore be proposed that the strategic role of the TMO is to provide a platform for delivering the strategic benefits as a result of implementation of the project. This occurs at point (iii). The realization of the client's policy and business objectives is normally dependant on the efficiency of the parent organisations transition processes, at point (v). However, analysis reveals that effective transition processes support the realisation of short-term strategic objectives, but are not critical to the long-term strategic aspirations of the client organisation, as shown in Case Study A. Once the project is complete, it is remains the responsibility of the permanent organisation to realise the expected benefits from investment in the construction project.

6.7 Project Success

The final objective of this thesis is to explore the linkages between project success and the intended strategic objectives of TMO member organisations and actors. Firstly, the varied perceptions of project success within a construction project are explored through a model of project success within a TMO, presented in Figure 6.3, developed from the findings of each case study. The linkages between project success and the contribution to organisational strategic objectives are then analysed through the lens of Shenhar *et al's* (2001) success dimensions framework, presented in Figure 6.4.

6.7.1 Success criteria within a TMO

As previously determined, the realisation of the policy, strategic and operational objectives identified in Table 6.2 are dependent on the successful delivery of the construction project by the TMO. However, as established in Section 2.6, within a typical project, there exist varied perceptions of success due to the differing interests of stakeholders involved in a project (Pinto and Slevin, 1988; Baccarini, 1999; Cooke-Davies, 2007). As such, success criteria will be more varied in a TMO where there exists greater complexity of stakeholders. Consequently, there is a greater possibility that perceptions of success, between stakeholder groups, will be conflicting.

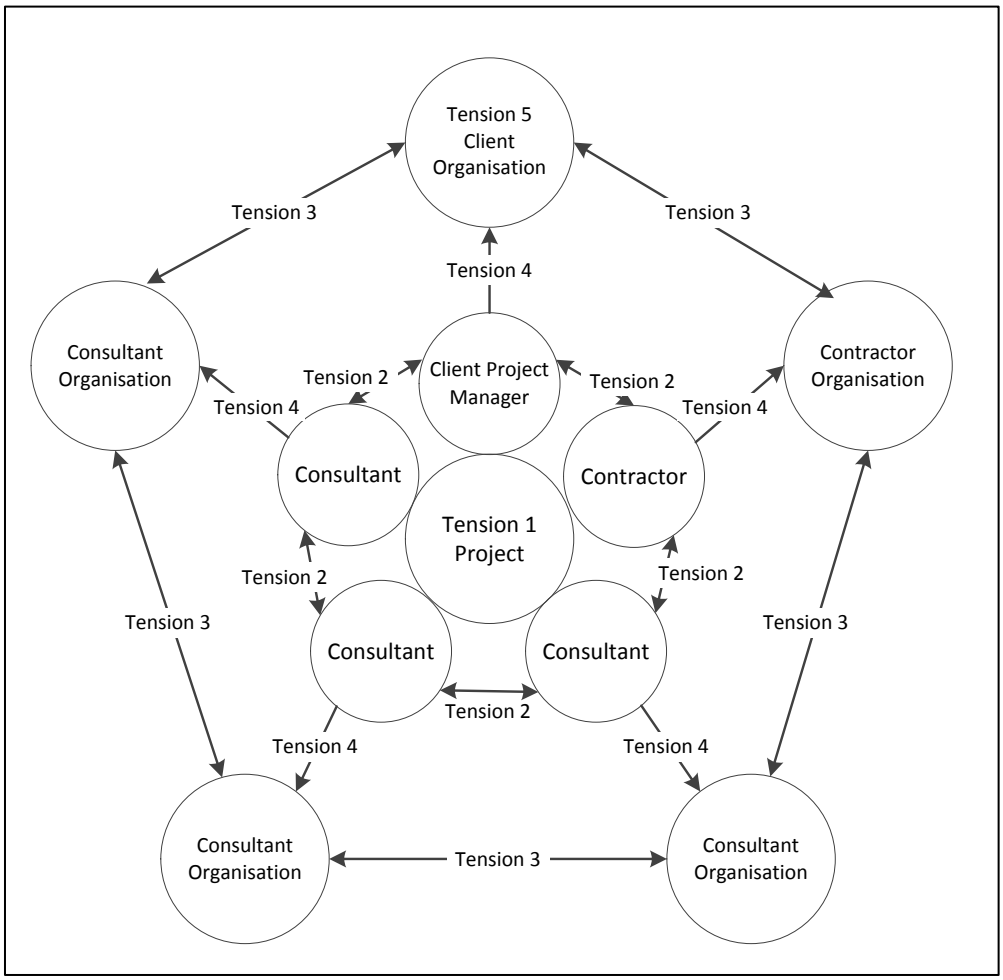

Figure 6.3: Model of project success within a TMO

Analysis of the case studies reveals five possible tensions where differences in project success criteria may occur within a typical TMO. These are illustrated in Figure 6.3. Each tension is examined in respect to the influences on the behaviour of TMO actors in the pursuit of the operational objectives of each construction project. Within the model, alignment is achieved when there is a degree of fit between the varied project success criteria and the strategic objectives of each organisation within the TMO.

6.7.1.1 Tension 1: Between project objectives

The first measure of project success, across all case studies, was assessed on the efficiency of the TMO in achieving the time, cost and quality project objectives, identified in Tension 1 of Figure 6.3. Consistent with Baccarini's (1999) framework, at the operational level, the perception of success is determined, primarily, by TMO performance. Tensions occur, when there is a need to prioritise between meeting delivery of the project by the deadline, budget or expected level quality. It is proposed that in such circumstances, the TMO pursues a completion strategy based on the relative

importance of the client's strategic objectives. Analysis reveals that completion of the project will take priority as the first measure of success, in particular when handover is of significant importance and there is a schedule dependency on completion by the end users of the facility.

In Case Study A, the TMO prioritised completion of the new residency over budget and quality objectives. Actors were aware of the reputational damage to the university should there be a failure to meet the commitment made to students to offer accommodation in the new facility. Furthermore, failure to meet the revised deadline would have further implications on the, already, tense relationship between the client and the TMO. The strategy of the TMO was, therefore, to handover the residency to the university before the students arrived and complete the works during the transition period. This allowed the residency to be operational in time for students arriving, but incurred quality defects, cost-over runs and hindered the transition processes of the client organisation.

Similarly in Case Study C, completion of the office and laboratory facilities in accordance with the schedule also took precedence. Migration from the five existing laboratories and offices were planned and scheduled in accordance with the relocation project. Any delays in completion of the new facility would have had an effect on productivity of ECA and impact on business continuity. The new office and laboratory were complete by the deadline, although there were some minor quality defects that were addressed, post handover.

Completion of the visitor centre by the 700th anniversary of the battle was also the key focus of the TMO in Case Study D. The Trust had publicly announced an official opening to commemorate the anniversary of the battle, the year prior to completion. Moreover, the Government, as the main sponsor, had included the opening of the visitor centre by the significant anniversary, in their public manifesto. Due to the high public profile of the project, failure to meet schedule commitments would have caused reputational damage to NCT, the Government, and HEA as project managers. However, in the absence of artefacts from the battle site, the success of the visitor centre was also dependant on the quality of the visitor experience. Potential, impact on the quality objectives as a result of the deadline was, therefore, mitigated through the overlapping

of project activities and the reduction of the time dedicated for transition and operationalization of the visitor centre.

In contrast, although completion by the deadline was the main priority in Case Study B, there were no trade-offs required between schedule, budget and quality, as the project completed one week early. This allowed completion of other related projects within the regeneration programme that were dependent on access from the new carriageway. These included the new facilities being constructed for the high profile Games that were dependant on completion of the new carriageway by a set deadline in order to commence preparations and provide access to venues.

6.7.1.2 Tension 2: Between completion of tasks

Tension 2, identified within Figure 6.3, occurs between actors in the completion of the project tasks. Analysis confirms that, as a result of the task focus inherent in TMOs, actors will operate in *silos* and concentrate, primarily, on the successful implementation of the individual tasks they are contractually responsible for. As a consequence, there is general lack of integration between actors from different TMO member organisations, as discussed in Section 6.5.2. Tensions evolve when there is a dependency on the completion of specific tasks to complete particular parts of the project.

In Case Study A, it was found that the lack of integration between the structural engineer and architect led to numerous reiterations of plans and subsequent delays in design information being issued to the MC. As a result of the pressure on TMO member organisations to complete the project, a blame culture developed between the client, the PMC and the MC, which caused further tensions between actors. There was also evidence of *silo* behaviour between TMO organisations in Case Study D. This was particularly strong in tasks involving creative disciplines, as previously discussed. Analysis reveals that the main tensions between actors involved the installation of the CGI, where designers focused only on the success of the interpretation, independent of other tasks comprising the project. This included the main contractor responsibilities and construction of the building. However, in contrast to Case Study A, mechanisms were put in place through effective leadership, to ensure focus remained on delivery of the operational objectives.

Analysis finds that there is a greater prospect of achieving project objectives when tasks are efficiently integrated. This was evident in Case Studies B and C. Findings suggests that increased social interaction and prior collaboration does lead to improved integration of tasks. In Case Study C, task integration was attributed to the on-site, co-location of TMO actors. Consistent with the findings of Kavanagh and Kelly (2002), increased face-to-face communication through co-location enabled rapid response to project issues and greater inclusion among actors through informal discussions. Also, in Case Study B, where TMO actors had previously worked together on EPA projects, actors had already developed the necessary trust and understanding prevalent in permanent organisations (Meyerson *et al.*, 1996).

6.7.1.3 Tension 3: Between TMO member organisations

Tension 3, considers the success criteria of each TMO member organisation, which is measured on achieving the anticipated strategic objectives through participation in the project. Whereas, analysis finds alignment between the long-term strategic aspirations of each TMO member organisation, shown in Table 6.2, tensions occur in the pursuit of individual, operational objectives, that each TMO organisation expects to be achieved as a result of investment of resources in the project.

Consistent with Curtis *et al's* (1991) vicious circle theory, the main source of tension in Case Study A was between the unversity who were seeking to maximize value for money through the procurement process and the MC who was seeking to maximize profit. Findings reveal that the financial strategy of the MC was to submit a low tender application and look for alternative means to recoup lost income, mainly through claims for additional works (Ioannou and Leu, 1993). The JVC in Case Study B, and consultants in Case Study C also reported that they did not meet organisational financial objectives expeted through participation in project.

In Case Study D, tensions evolved between the MC and other consultants over the lack of resources made available to the project. In the attempt to make cost savings through minimising the resources allocated to the project, the construction of the building fell behind schedule. Not only did this have an impact on the progress of dependant activities, but also had an impact on the realisation of project objectives and the perception of the efficiency of the TMO in achieving them. Analysis reveals that,

despite comprising of separate organisations, the successful performance of the TMO is assessed as a single entity by the client.

6.7.1.4 Tension 4: Between organisations and TMO actors

The fourth tension occurs between TMO member organisations and their representative actors participating in the project. The review of literature on project success in Chapter 2 finds no distinction made between the success criteria of specific stakeholders. However, analysis reveals that a TMO creates a context where actors often need to balance the short-term operational objectives of their employer organisation with the operational objectives of the construction project. This occurs, in particular, when there is an impact on the time of resources committed by a TMO member organisation to complete project tasks.

In Case Study A, the extended time spent on the construction of the residences increased the operating costs for both the PMC and the MC. Furthermore, as a result of the delay, resources committed to completion of the project were unable to transfer to other projects. Lengthy negotiations with the client over claims, also incurred additional management costs for the MC. Similarly, in Case Study D, the architect and ID were required to spend more time on the visitor centre than originally planned. This created a risk to the progress of other projects the organisations were participating in.

Moreover, in Case Studies A and C, the client project manager prioritised the project objectives over the objectives of the stakeholder departments. In both cases, the client project managers prevented the project boards from directing the TMO and, instead, focused on delivery of the project by the deadline. Across all cases, findings suggest that TMO actors, including the client project manager, will focus on the project objectives over the strategic objectives of organisations within the TMO.

6.7.1.5 Tension 5: Between stakeholders within the client organisation

As shown in Figure 6.3, Tension 5 occurs within the client organisation, itself. The concept of project success within this context becomes particularly complex due to pluralistic client complexity (Thomson, 2011) and the varied objectives being pursued by different client stakeholders. The study finds general agreement across all case studies that the primary measure of success was the efficiency of the TMO in delivering schedule, budget and quality objectives. All projects were considered a success by the

client organisation, apart from Case Study A, which failed to meet schedule and budget objectives. This was despite the residency being, practically, complete in time for students arriving.

Whereas there was general agreement on TMO efficiency as a success measure, analysis finds that tensions occur between departments competing to realise strategic objectives through implementation of the project. At the business level, success is measured on the realisation of individual strategic objectives. Within the case studies, this was assessed on end user satisfaction. In Case Study A, Student Services reported high level of student satisfaction, despite issues with quality, and schedule and cost over runs that had an impact on the operations of the Department of Hospitality and the Department of Estates. Similarly, in Case Study C, staff feedback on the new facility was reported as being positive. This was despite varied departments reporting that layouts of laboratories and facilities were not delivered as requested. In Case Study D, visitor feedback was also very positive, which supported the strategic objective to increase visitor numbers. However, in Case Study A, where the project did not meet time and budget objectives, the focus of success remained on the performance of the TMO, despite positive end user feedback.

The final measure of success from within the client organisation was on the contribution the project made to achieve the corporate strategy as described in the Level 1, policy objectives in Section 6.3.1. Across all cases this was the longer-term measure of project success, although indications of achievement were realised soon after completion of the project. In Case Study A, the reputation of the university was enhanced through the offering of a higher quality student residency. In Case Study C, EPA was able to reduce operating costs through the migration of staff to a single location. In Case Study B, the project received a national award for its contribution to regeneration of the city. The visitor centre in Case Study D also received varied awards and increased public awareness, thus, securing the conservation of the historic monuments at the battle site.

6.7.2 Dimensions of project success

Analysis of each case study confirms the subjective nature of project success (Pinto and Slevin, 1988; Freeman and Beale, 1992). Within a TMO, the success of a construction project is measured at micro and macro levels, consistent with Lim and Mohamed's (1999) proposition for projects, in general. The findings reveal that the dominant

measure of success remains on the efficiency of the TMO to deliver the project within the time, cost and quality project objectives. However, the thesis also finds that, in addition, project success is measured on the contribution the project makes to the strategic objectives of the client and participating organisations within the TMO.

Consistent with Shenhar *et al's* (2001) success dimensions framework, the study confirms that perceptions of success are time framed. Analysis reveals that short-term assessment of project success made during project execution and immediately on completion focus on the successful delivery of the operational objective. Long-term assessment of the project focuses on the strategic value the project adds to the organisation, as a result of investment. Figure 6.4 builds on Shenhar *et al's* (2001) success dimension framework, shown in Figure 2.2, to illustrate the relationship between time and strategic value, in the context of a TMO.

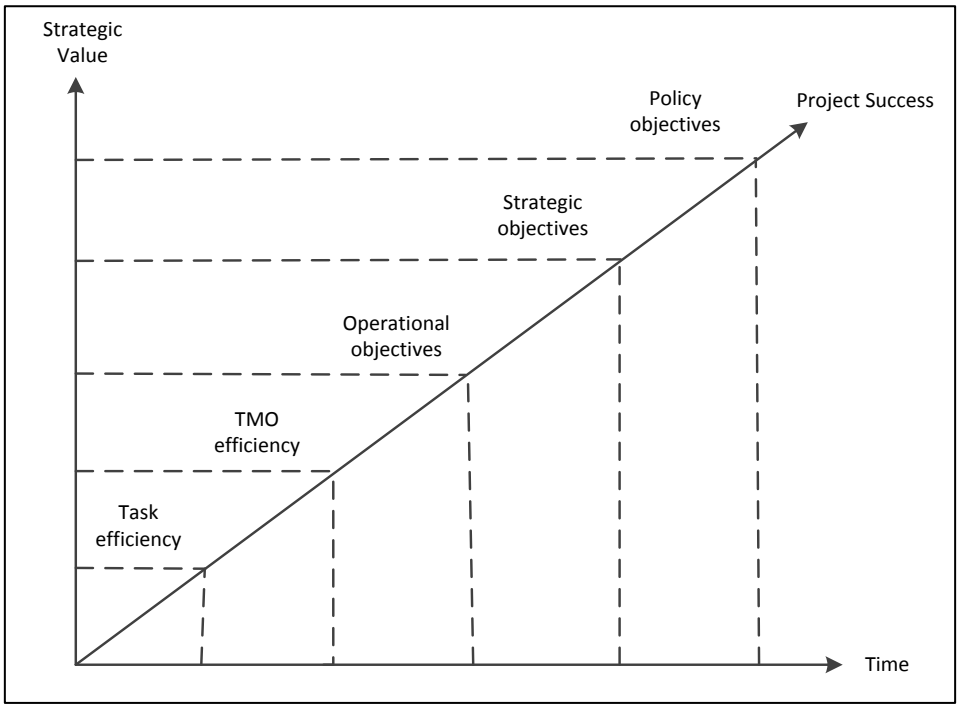

Figure 6.4: Strategic value of project success over time

As illustrated in Figure 6.4, during execution, success of a construct project is measured on the efficiency of individual TMO member organisations to execute individual project tasks within, the micro level, time, cost and quality objectives. In isolation, project tasks have little strategic value to the organisation and contribute only to the operational objectives of the project. As established in Section 6.7.1.2, it is the successful integration of project tasks that leads to the successful execution of the project.

Consistent with Shenhar *et al's* framework (2001), during and immediately after project execution, success of the project is measured on the TMO efficiency in delivering the operational objectives of the project within the specified timeframe, budget and level of quality. It is through successful execution that the strategic objectives expected from the project can be realised. The first objectives to be realised through successful completion of each project is the operational impact on the client and TMO member organisations.

For client organisations the operational impact was the immediate organisational transition as a result of the new facility. Within Case Study A, the university were able to accommodate new students. Within Case Study C, EPA was able to close existing buildings and relocate staff within a single location. Within Case Study D, NCT were able to publicly display an innovative interpretation that reflected the historic importance of a battle site. Finally, in Case Study D, Local Highways were able to direct traffic to the new carriageway, thus, alleviating heavy traffic in other areas. Furthermore, the risk of local flooding was reduced, as result of the installation of the flood prevention system.

In contrast, the operational impact for TMO member organisations was the profit, or loss, as result of participation in the construction project, and lessons or capabilities developed as a result of participation in TMO. In Case Study B, operational benefits were developed through joint ventures, and within Case Study D, operational benefits were developed through sharing of capabilities in the design and installation of the interpretation.

Project success in the short-to-medium-term is measured on achieving the strategic objectives at the business level, as identified in Table 6.2. Success at this level is measured over a period of time after implementation of the project. In Case Study A, a measure of success for the client organisation included a tangible reduction in the maintenance of the university estate, and also a contribution to the financial position as a result of income generated from the high quality student residences. Similarly, in Case Study D, strategic success was measured on the reduction in operating costs and increased efficiency savings as a result of the relocation. In Case Study D, medium term success was measured on the increased visitor numbers and, the consequential, increased financial income. Whereas, in Case Study B, strategic success was measured

on the ease of traffic flow, but also the use of the new carriageway and visitors to the East end of the City. In contrast, for TMO member organisations, strategic successes are measured on the number of new contracts or enquiries the member organisations attracted as a result of successful delivery of the construction project.

Within the model in Figure 6.4, long-term project success is measured on the contribution the project makes to organisations long-term strategic aspirations. This includes the policy objectives of client organisation, as a result of investment in the project, and also the competitive market position of TMO member organisations as a result of contribution to the construction project. In Case Study A, long-term success for the university could be measured on the growth in student numbers as a result of increased reputation for the provision of high quality residencies. In Case Study C a long-term measure of project success for EPA would be the capabilities and new ways of working as a result of the relocation. In Case Study D, long term success is measured on increased visitor numbers across NCT's tourist attractions, and the consequential financial stability, enabling the conservation of other historic monuments. Whereas, in Case Study B, the long-term success of the project for the city is measured on the increased economic activity within the regeneration area, as a result of new businesses and housing relocating to it.

6.8 Model of strategic alignment within a TMO

As discussed in Section 1.5, an aim of the research was to develop a theoretical model of strategic alignment within the context of a TMO, to explain how varied organisations within a TMO seek to align multiple strategic objectives through a single construction project. The review of the extant literature in Chapter 2 finds that current models explaining the strategic alignment of projects with organisational strategy have been developed within the context of a single organisational boundary. Within these, strategic objectives established at the corporate level, cascade through the organisational hierarchy to be implemented as projects to support the corporate level strategy (Archibald, 1988; Mintzberg, 1994; Morris and Jamieson, 2004). The temporary organisation created to implement the project therefore operates within the boundaries of the permanent organisation.

In contrast, as discussed in Section 3.6, a TMO operates across multiple organisational boundaries. Whereas construction projects are implemented to support the strategic

objectives of the sponsoring organisation, as discussed in Section 6.3.1, alignment between the varied strategic objectives of organisations participating within the TMO become highly complex. This complexity is explained through the model of strategic alignment within the context of a TMO, presented in Figure 6.5.

6.8.1 Model development

The conceptual model, presented in Figure 3.10, was developed from the initial themes evolving from the extant literature review. Themes emerging from the literature review were listed in the Initial Template, contained in Appendix D, and investigated through the four case studies outlined in Chapter 4. Following development of the Final Template, contained in Appendix E, the model in Figure 6.5 was developed and validated through the findings of case studies in Chapter 5 and cross-case analysis within this chapter. In contrast to existing models of strategic alignment, the model of strategic alignment within the context of a TMO recognises that construction projects provide a context through which the strategic aspirations of multiple organisation are realised.

6.8.2 Discussion of model

The conceptual model in Figure 3.10 illustrates how the strategy of the TMO, that emerges to pursue operational objectives and realise the project success criteria of the client, is influenced by formal governance mechanisms, TMO behaviours, and internal and external environmental factors. The definitive model in Figure 6.5 acknowledges that the strategy of the TMO is also influenced by the strategic objectives of the component TMO member organisations.

Drawing on the findings from the research, each factor potentially influencing the strategy of the TMO is discussed in detail, with the implications for the realisation of project success and an explanation of how multiple organisations within a TMO seek to align their varied strategic objectives through a single construction project. The discussion of the model begins with identification of the strategic drivers that determine the client project success criteria. This is followed by identification of the influential factors that determine the TMO strategy and consequential project success during the design and construction phases of the construction project.

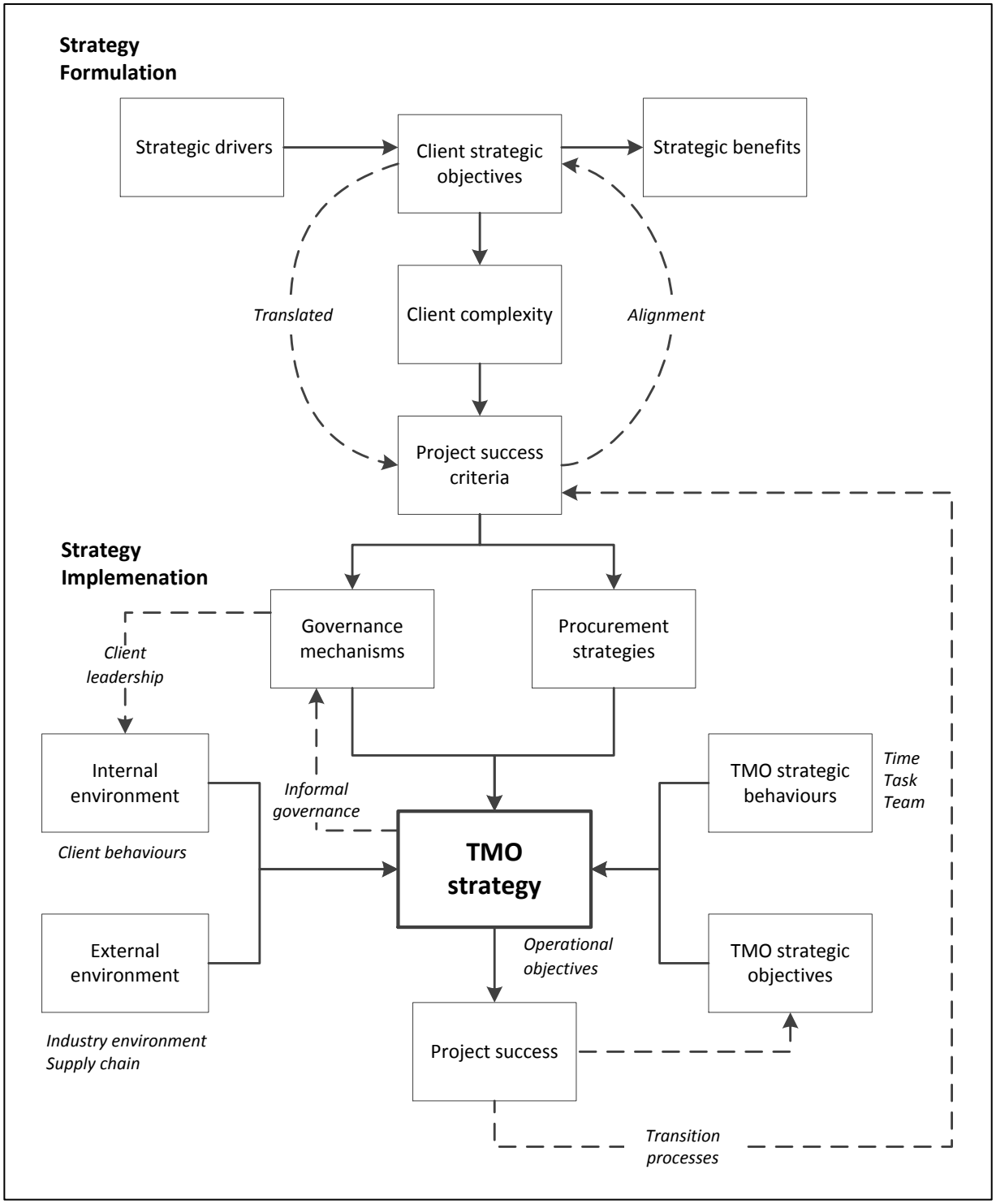

Figure 6.5: Model of strategic alignment within a TMO

6.8.2.1 Strategic drivers

The findings of the case studies, discussed in Chapter 5, confirm that construction projects are implemented to support a client's strategic objectives. Within this thesis, all case studies involved public sector client organisations, and were therefore determined by strategic drivers originating from the external, political environment. In Case Study A, the strategic driver was the change in HMO regulations that meant that the existing

residencies no longer met acceptable housing standards. In Case Study C, the strategic driver was the financial restrictions that forced the public sector organisation to seek operating and cost efficiencies. Whereas, in Case Studies B and D, the projects were driven by political initiatives, that saw the release of public funding to deliver the the project benefits.

However, despite the attention and effort dedicated to a construction project, the case studies show that the new facility, or carriageway, is only one component of the organisations strategy. The strategic benefits from investment into a construction project are dependent on other related projects and tasks, and efficient transition processes implemented as the TMO disbands.

6.8.2.2 Project success criteria

As shown in Figure 6.5, the strategic objectives of the client organisation are translated into project success criteria for implementation by the TMO. Findings from the research show that TMO members are aware of their client's strategic objectives and will plan the project accordingly. However, as discussed in Section 2.6, the success of a project is both subjective and time dependant. In the first instance, the pluralistic complexity of the client body often results in competing perceptions of success criteria as a consequence of conflicting strategic objectives at the business level. Consistent with Thomson's (2011) and Newcombe's (2003) studies, this was evident in Case Studies A and C where competition evolved between stakeholders to influence the TMO and manoeuvre the operational objectives of the project in the favour of a particular SBU. Secondly, as previously established, the client's strategic objectives can only be realised on completion of the project. Therefore, at the strategic level, the primary focus of project success is ensuring that the scope and requirements of the construction project align with the client's strategic objectives.

6.8.2.3 Procurement strategies

Consistent with practice, the model in Figure 6.5 shows that construction clients will implement procurement strategies and establish formal governance mechanism to direct the TMO in the realisation of the project success criteria. The model proposes that the TMO strategy that emerges to achieve the success criteria and realise the client's strategic objectives, is influenced through the choice of procurement strategy and the formal governance processes created by the client organisation to direct the TMO.

The study finds a relationship between the choice of procurement strategy and the level of control that the client sought to maintain over the design. In Case Study A, the traditional procurement strategy was selected to ensure that materials and suppliers, used in the construction of the residences, aligned with the estates strategy for low maintenance. In contrast, within Case Study D, responsibility for the design of the interpretation was transferred to the interpretation consultant, who had the required specialist knowledge to achieve the strategic objective of the visitor centre. Whereas, in Case Study B, there was evidence of tensions between the client and design engineer over responsibility of the design that had been procured under a design and build strategy.

6.8.2.4 Governance mechanisms

The model in Figure 6.5 proposes that procurement strategies require formal governance mechanisms to be managed effectively. This involves the formation of a project board created to ensure that the TMO operate within the conditions of contract, and the strategic interests of the client stakeholders are maintained throughout the execution of the project.

However, as found in the case studies, the effectiveness of the project board is dependent on the efficiency in communicating directives to the TMO. In Case Studies A and C, the project board provided conflicting and mixed directives to the TMO, which had an negative impact on its performance, consistent with point 14 of Chern's and Bryant's (1984) framework. The model supports Ruuska *et al's* (2011) findings that governance mechanisms emerge during the project life cycle, and draws a distinction between the formal governance processes implemented by the client organisation and the informal governance mechanisms that evolve through a process of self-regulation. Analysis of the case studies shows that self-regulation of the TMO will be more prominent when the impact of client complexity on the TMO performance is at its highest. This was demonstrated in Case Studies A and C. The findings show that the TMO will alter and pursue its strategy accordingly.

6.8.2.5 Environmental influences

As shown in Figure 6.5, the strategy of the TMO is also influenced by internal and external factors. Within the model, internal influences include client behaviours driven

by the leadership from within client organisation. Analysis reveals that the consequences of pluralistic client complexity are mitigated through effective leadership by a client project manager who acts as a single point of contact between the client organisation and the TMO. Within the context of TMOs, effective leadership ensures that the strategic objectives of the client organisation are communicated to TMO actors without ambiguity. Moreover, in overlapping the organisational boundaries between the client organisation and the TMO, the client project manager has a greater understanding of the strategic objectives of the project and the factors that determine the strategy of the TMO.

In Case Study A, the behaviours of the client had a negative impact on the performance of the TMO. In contrast, in Case Studies B and D, client behaviours supported and enhanced TMO performance. Other client behaviours identified within the Final Template, contained in Appendix E, include communication of directives to the TMO and creating environments of trust. Within the temporary organisation literature, research on trust appears to focus on relationships between TMO actors, and does not consider the necessary trust between the client organisation and TMO member organisations.

The external influences on the TMO strategy are those factors outwith the control of the TMO. These include the environmental factors that impact on the construction industry such as social, political and economic issues. But also, the availability of sub-contractors within the contractors supply chain and utility suppliers that are not part of the TMO but work to unique contractual conditions and schedules.

6.8.2.6 TMO Strategic objectives

Unlike existing models of strategic alignment of projects, the model of strategic alignment within the context of a TMO acknowledges the strategic objectives of TMO member organisations being pursued through a single construction project. As demonstrated within the study, TMO member organisations participate in construction projects to realise short-term and long-term strategic objectives. Consultant and contractor, corporate level strategies may include diversification into other industries, or enhancing reputation in order to develop and sustain a competitive position, as demonstrated in Case Studies A, C and D. Business level strategies may include the development of partnership and securing future work with an existing client, as pursued

in Case Studies A, B and C. However, at the operational level, project success is measured on the short-term strategic objectives and the realisation of the commercial objectives of the TMO member organisation, which includes profit in exchange for services. The strategic priority, and hence the TMO strategy, is dependant on the time available to complete the project, and the strategic significance of the project to the TMO and the client organisation.

6.8.2.7 TMO Behaviours

Within the final model TMO strategy is driven by the strategic behaviours of TMO actors and member originations. The strategy to deliver the project is therefore dynamic and evolves over the duration of the project, rather than being developed at a fixed point in time. Whereas, TMO actors are aware of strategic rationale of the project, and the strategic intentions of their representative organisations, the performance of the TMO will, inevitably, be measured on the efficiency in delivering the construction project within the project success criteria of time, cost and quality. It is in the pursuit of these criteria, along with the environmental influences, that the final strategy of the TMO is determined.

Drawing on the theory of the temporary organisations (Lundin and Soderholm, 1995), the model in Figure 6.5 acknowledges that TMO behaviour will be subject to the integration of project tasks. As established within Case Studies A and D, TMO actors focus on the element of project activities they are contractually responsible for, as success for individual TMO member organisations is measured on the performance of individual project activities. However, as illustrated in Figure 6.4, it is the integration of the project tasks that contribute to the successful performance of the TMO and the realisation of the operational objectives of the project.

6.8.2.8 Project success

As established within this thesis, the concept of success is diverse and subjective. The model of strategic alignment within a TMO shows that the success of a construction project is assessed at varied levels, both, within client organisation, and TMO member organisations. Across the case studies, the primary measures of project success are on achieving the operational objectives of the project within the boundaries of time, cost and quality. As previously discussed, it is against these criteria that the TMO is judged. The study finds that completion by a specified date is of particular importance,

especially when the delivery of the construction facility is of strategic significance to the client organisation. Due to the tangible nature of a construction project, failure to meet the deadline will impact on reputation of the client and the TMO.

The next level of project success is measured on achieving stakeholder satisfaction. For the client, this includes the end-user satisfaction of the complete construction and the internal and external stakeholders involved in the project. For the TMO, the success of the project is measured on the satisfaction of the client. It is only through client satisfaction that the longer-term strategic objectives of repeat contracts, partnering and strategic positioning, can be realised.

The model of strategic alignment shows that all organisations involved within a TMO, are dependent on successful implementation of the operational objectives of a construction project for organisational strategies to be realised. Efficiency in delivery of the project objectivises enables TMO member organisations to realise strategic objectives through participation in the TMO. Inventively, project success of the client organisation is measured on the contribution the construction project makes to the long-term strategic objectives articulated within the organisations vision. However, as shown in Figure 6.5, project success for the client is dependant on the implementation of efficient transition processes.

6.8.3 Benefits of the model

The intention of the model of strategic alignment within a TMO is to identify those factors that influence the strategic behaviour of the TMO in execution of the operational objectives of a construction project. It is proposed that awareness and greater understanding of the varied strategic objectives being pursued through a single construction project will support the decision-making process and performance of the TMO through the project life cycle of the project. The model recognises the varied strategic objectives being pursued through a TMO and the varied measures of project success. However, as established within the study, it is only through successful execution of the operational objectives that strategies within the TMO can be realised. The model supports this by demonstrating the influences on the strategic behaviour of the TMO, which in turn, impacts on the operational objectives, and consequently, on strategic objectives of the client and TMO member organisations.

6.9 Summary and conclusion to chapter

Analysis of the findings of the case studies, detailed in Chapter 5, reveals that the varied strategies within a TMO are aligned, rather than competing, as current literature suggests (Jones and Lichtenstein, 2008). Client organisations implement construction projects to provide a facility, or structure, through which the long-term strategic aspirations of an organisation are realised. Construction projects also enable emergent opportunities for the client at the business level. The hierarchy of strategic objectives in Table 6.2 shows how TMO member organisations develop and align their individual business objectives through the client operational objectives. It can therefore be determined that the realisation of strategic objectives, across all organisations, is dependant on the successful delivery of the construction project.

The research finds that the greatest challenge for the alignment of strategic objectives originates from within the client organisation, consistent with Cherns and Bryant's (1984) proposition. Whereas, vertical alignment within the client organisation has been established, conflict arises between the business level objectives of each SBU. This is particularly evident in public sector organisations where there exists a level of pluralistic client complexity (Thomson, 2011; Newcombe, 2003). The study finds, that in such cases, SBUs and departments will seek to the position the project in favour of a particular business strategy.

The study finds that when pluralistic client complexity is present, alignment is maintained through the leadership of a client project manager who acts a single point of contact between the client and the TMO. However, despite formal and informal governance process, the TMO will begin to self-regulate. The extent of self-regulation is dependant on the efficiency of the governance processes and the behaviours of the client as a result of the pluralistic complexity within organisation. Significantly, when client leadership is transactional, TMO actors will defer to the behaviours determined within the conditions of contract.

Whereas, the study demonstrates that the varied strategic objectives of TMO members are aligned through a single construction project, the research finds different perceptions of project success among actors. As discussed in the model of strategic alignment within the context of a TMO, presented in Figure 6.5, organisational strategic objectives can only be realised on completion of the construction project and are dependant on

other initiatives and efficient transition processes for achievement of strategic benefits. Actors within the client and TMO therefore focus attention on project success criteria that enable strategic objectives to be realised. As illustrated in Figure 6.3, the perceptions of project success differ between actors, organisations and strategic levels within a TMO. However, the TMO strategy that emerges to deliver the project will, inevitably, focus on the short-term objectives, and prioritise delivery by a predetermined deadline over quality and budget, as the most important success criteria. As shown in Figure 6.5, it is the client's governance processes, internal and external environmental factors, the strategic behaviours of TMO actors, and strategic objectives of TMO member organisations that influence the strategy of the TMO. It is therefore concluded that the project is successful when there is alignment between the strategic intentions of all organisations within the TMO, and the operational objectives of the project.

CHAPTER 7
CONCLUSION

7.1 Introduction to chapter

The previous chapters to this thesis provided the theoretical foundations, data collection and analysis, and discussion of the theoretical models developed from the findings. This chapter presents the contribution and final conclusions of the research. The chapter begins with a review of the aims and objectives of the study. This is followed by a discussion of the contribution to theory and the contribution to management practice provided by the research. In reflecting upon the limitations of the study, recommendations for future research are proposed. Finally, the concluding remarks of the thesis are offered.

7.2 Review of aims and objectives

The aim of this thesis was to investigate how varied organisations within a temporary multi-organisation seek to align multiple strategic objectives through a single construction project, and realise project success. This is explained through a model of strategic alignment within the context of a TMO, presented in Figure 6.5. The definitive model of the study identifies the complex interactions and influences that determine the strategy of a TMO in pursuit of client operational objectives and project success. To address the aims of the thesis, the following research objectives were achieved.

7.2.1 Objective 1: Alignment of strategic objectives

The first objective of the thesis was to explore how the multiple organisations within a TMO align varied strategic objectives through a single construction project. This objective was satisfied through a review of the theoretical perspectives explaining the domain of fit, and the development of a hierarchy of objectives within a TMO, from the empirical findings of the study.

The review of the strategic management literature, presented in Chapter 2, concluded that that strategy occurs at different levels within an organisation. The dominant discourse proposes that each level be constrained by the upper level within a strategic hierarchy (Hofer and Schendel, 1978). Strategic alignment is achieved by setting objectives at the corporate level and cascading down the strategic hierarchy to be implemented as projects (Archibald, 1988; Youker and Brown, 1998; Kerzner, 2004).

However, the literature also recognises that each level of the hierarchy will be constrained by distinctive, and often competing, internal and external environmental forces (Haniff and Fernie, 2008; Morris and Jamieson, 2005). As such, objectives at each strategic level will be developed, and change, in response to the environmental conditions in which it competes. The filtering of strategic objectives from the corporate level is, therefore, subject to a complexity of interactions, processes, and varying objectives that, incrementally, influence the project.

As demonstrated in the review of the literature, models explaining the hierarchy of strategic objectives predominantly focus on alignment of projects within a single organisational boundary. Within the intra-organisational context, the general assumption is made that the temporary organisation, created to implement the project, will act as an *'obedient servant'* to a single parent organisation (Artto *et al.*, 2008), and the strategic objectives formulated at the corporate and policy levels of a hierarchy are fixed for the temporary organisation to implement as directed.

In taking an inter-organisational perspective to strategic alignment, the research conducted an empirical investigation into four public sector construction projects whereby the temporary organisation, created to implement the project, consisted of multiple organisations. The assumption within the literature is that varied organisations that constitute a TMO will have disparate and competing strategic objectives (Morris, 1982; Jones and Lichtenstein, 2008). However, the findings of the research suggest that the strategies of all TMO organisations are aligned and are, at least partially, dependant on each other.

Drawing on Archibald's (1988) and Youker and Brown's (1998) strategic hierarchies, discussed in Section 2.7.2, the hierarchy of strategic objectives within the context of a TMO, presented in Table 6.2, identifies the varied strategic objectives of the client, consultant and contractor organisations to be realised through the construction projects within the study. The model demonstrates how the project deliverable at the operational level of the hierarchy supports the varied strategic objectives of the client organisation, and through successful execution, enables component TMO member organisations to realise strategic aspirations through participation in the project.

As shown in the hierarchy, the long-term strategic intentions, to be realised through investment in the construction project, are determined at the policy level of the client organisation. Policy objectives are supported at the business level through competitive strategies and strategic opportunities that emerge from the decision to build. Significantly, the analysis finds that it is at the business level, of the client's organisational hierarchy, where conflicts between strategic objectives are likely to occur. The findings of the study support the notion of pluralistic client complexity (Newcombe, 2003; Thomson, 2011). As discussed in Section 6.4.3 this creates a condition whereby SBU's, compete for attention and resources from the corporate level of the client organisation (Gupta and Govindarajan, 1986) whilst seeking to manoeuvre the operational level of the project in favour of their own, unique, strategic requirements.

The hierarchy demonstrates how TMO member organisations align unique strategic objectives with the operational objectives of the project. The findings of case studies confirm that consultant and contractor organisations select the projects they intent to participate in for reasons other than commercial. Across the case studies, involvement in the TMO supported the long-term strategic positioning of consultant and contractor organisations. This included diversification and market entry into specialist industries, expansion in the current market, and maintaining and enhancing current competitive advantages. Business level objectives were pursued through demonstrating organisational capability, establishing reputation in the local market, and securing repeat contracts with the same public sector client. However, as determined within the research, the realisation of strategic objectives is dependent on the successful execution of the project.

It is therefore concluded that organisations participating within a TMO, align their varied strategic objectives through the successful deliverable of a construction project, as demonstrated within this thesis. It is through the project deliverable that the clients business objectives, and subsequent, policy objectives can be realised. Component TMO member organisations are able to pursue their long-term strategic intentions through the successful realisation of the client's operational objectives.

7.2.2 Objective 2: Effectiveness of governance mechanisms

The second objective of the theses was to examine the effectiveness of mechanisms implemented to maintain alignment of strategic objectives. This objective was satisfied though a review of theoretical formal and informal governance processes, and an investigation of governance practices across the four case studies, forming the empirical stage of the research.

The review the literature in Chapter 3, finds that formal governance mechanisms focus on procurement strategies and conditions of contract, implemented by the client organisation, to ensure that the TMO maintains alignment with the operational objectives of the project. Section 3.6.2 provides an overview of the common contractual relationships that determine the structural configuration of the TMO. Within these, the findings from case studies enabled a comparison between construction projects that had adopted the traditional, general contracting, procurement strategy, with TMOs that were employed under a design and build contract route. The cross-case analysis in Chapter 6, suggests that the efficiency of the procurement strategy, in terms of maintaining strategic alignment, was dependant on the coordination of the TMO and the formal governance structures established by the client organisation.

Across all case studies, a formal project board was created for the purpose of governance. The research found that when a project board was responsible for direct coordination of the TMO, governance mechanisms were less effective. This was partially due to the pluralistic client membership of the project boards that resulted in slow decision-making and mixed, and often competing, directives being given to the TMO. Consistent with Ruuska *et al's* (2011) findings, within their study of major construction projects, this research also found evidence of self-governance. The findings of the case studies suggest, that in the absence of efficient client leadership, a TMO will begin to self-govern and focus on completion of the project within the conditions of contract, established within the procurement strategy.

An important finding of the research is that informal governance processes and client leadership, which evolves throughout the duration of the project, has the greatest impact on maintaining strategic alignment and the realisation of operational objectives. Cross-case synthesis in Chapter 6, firmly establishes that a single point of contact between the client and the TMO was the most effective structural configuration and led to greater

efficiency within the project in coordination of the TMO. In case studies B and D, where a client project manager was appointed at the start of the project, decisions were made quickly and TMO actors were able to focus on the project objectives, without being involved in the internal politics and issues relating to client complexity. These findings are consistent with Cherns and Bryant's (1984) points five and eight of their propositions, listed in Table 3.2.

7.2.3 Objective 3: TMO Strategy

The third objective of the research was to explore the strategy of the TMO in the pursuit of the varied organisational strategies inherent within a TMO. This objective was satisfied through an overview of the theoretical perspectives of project strategy in Chapter 2, and a detailed critique of the extant literature on temporary organisational forms in Chapter 3. As with the strategic management literature, the review found that research, primarily, focuses on the characteristics of a temporary organisation within the single organisational paradigm. To address this gap, themes evolving from the literature were empirically explored within an inter-organisational context. Internal and external environmental factors influencing the strategy of the TMO were identified from the findings and analysed for inclusion within the model of strategic alignment within a TMO, presented in Figure 6.5.

Analysis from the research found that the greatest influences on the TMO strategy originate from the client organisation. These included coordination of the procurement strategies and the formal governance arrangements, and leadership of the TMO, as previously discussed. In addition, the study found that the client leadership style has a direct impact on the strategic behaviours of the TMO. Whilst it was established that leaders within the project environment were task focused, the findings show that project leadership, which understands and supports the strategic objectives of individual TMO organisations, will be more effective.

External influences were categorised as those factors outwith the control of the client or TMO. These were identified as the current environmental issues that impact on the construction industry, and behaviours within the contractor supply chain. Within these, the economic financial crises of 2008-2013 had a substantial impact on the construction industry. This included risk and uncertainty for consultants and contractors, but also the

availability of specialist sub-contractors and trades, which was critical in the completion of projects and realisation of operational strategy.

The strategic behaviours of TMO actors were analysed from the four concepts of *time*, *task*, *team* and *transition*, within Lundin and Soderholm's (1995) theory of temporary organisations. An important observation from the research was that the concepts are not static and behaviours evolve over the duration of the project, in reaction to other influences. Evidence shows that towards the final stages of the project, the strategy of the TMO is on completion of the project by the established deadline. This is at the expense of other success criteria, including cost, quality, and the business objectives of the TMO member organisations. The primary concern of TMO actors is, therefore, the completion of the individual tasks they are contracted to achieve, and individual actors will pursue their strategy accordingly. In contrast to literature on temporary organisations, development of social relations and task integration are of secondary concern. Finally, in terms of transition processes, this becomes the responsibility of the client organisation, as illustrated in Figure 6.2.

7.2.4 Objective 4: Perceptions of project success

The final objective of the thesis was to explore the linkages between the varied perceptions of project success and the intended strategic objectives of TMO member organisations. A review of the literature on project success, presented in Chapter 2, concluded that the concept of project success is multifarious and subjective. Contemporary scholars have sought to address these ambiguities by drawing a distinction between success in the efficiency of project delivery by the temporary organisation, and business success as a result of the project outcome (Baccarini, 1999; Cooke-Davies, 2002; Shenhar *et al.*, 2001).

Drawing on these distinctions, the model of project success within a TMO, shown in Figure 6.3, was developed from the varied perceptions of project success gathered from all actors across the case studies. From the analysis of the findings, the model identifies five possible tensions where differences in perceptions of project success criteria may occur within a typical construction project. These are identified at the project level, where success is measured on the efficiency of the TMO in delivering the project within time, cost and quality objectives; between actors within the TMO on successful completion of individual tasks; between organisations within the TMO in pursuit of

individual business objectives; between TMO member organisations and their representative actors in the balancing of project objectives with business objectives; and within the client organisation as result of client complexity.

The linkages between the varied perceptions of project success, identified in Figure 6.3, and the contribution to the multiple strategic objectives are analysed through a model of strategic value of project success over time, presented in Figure 6.4. This model demonstrates the time-framed characteristic of project success. During and immediately after execution of a construction project, the primary measure of success is measured on the combined efficiency in delivery of project tasks within the time, cost and quality objectives. It is only through client satisfaction that the operational objectives have been achieved, that TMO member organisations are able to effectively pursue their individual strategic objectives. However, it was also observed, within the research, that the realisation of the operational objectives are dependant on effective transformation processes from the within the client organisation. As shown in Figure 6.4, the strategic objectives and the long-term strategic success, determined within the client policy objectives, will only be realised sometime after completion, once the TMO have disbanded. It is for this reason that the primary measure of project success, remains on the time, cost and quality objectives.

7.3 Theoretical Contribution

The study set out to explore how varied organisations within a temporary-multi organisation attempt to align individual strategic objectives through a single construction project. The aim was based on the initial assumption that, when compared to projects within a single organisational boundary, varied TMO member organisations will pursue diverse strategic objectives and exhibit differing perspectives of project success.

As established, current literature investigating temporary organisations forms focus on the intra-organisational characteristics of temporary systems created by a single parent organisation, whereas, research into TMOs focus on formal governance mechanisms and procurement strategies. Consequently, there exists a gap in empirical studies investigating the strategic behaviours of TMOs and, to date, no other research has conducted a study exploring the strategic alignment of multiple strategies within a

single construction project. The specific theoretical contributions of the thesis are identified and discussed in the following sections.

7.3.1 Contribution to theories of strategic fit

As discussed in Chapter 2, previous models of strategic fit focus on the formation and implementation of strategy within a single organisation. This is illustrated in Mintzberg's (1994) planning hierarchy, reproduced in Figure 2.1. The assumption is made that objectives determined by senior management are implemented accordingly. Within the project environment, models of strategic alignment propose that the temporary organisation, created to implement the project, will coordinate activities to realise the strategic objectives of a single parent organisation (Archibald, 1988; Kerzner, 2004; Morris and Jamieson, 2005).

In contrast, the model of strategic alignment within the context of a TMO, shown in Figure 6.5, reveals that the actions of the TMO are subject to the strategic objectives of multiple organisations converging on a single project. In explaining this through the model, the complexities of implementing strategy through a construction project are exposed. Consistent with current perspectives of strategic fit, Figure 6.5 proposes that strategy is formulated at the corporate level, but takes into consideration the implications of client complexity in defining the client's project success criteria. In comparison to existing hierarchies, the model of strategic alignment within the context of a TMO identifies the varied external and internal factors that influence the emergent strategy of the TMO in actions taken to achieve success of the project.

Whereas, integrated perspectives of strategic fit seek to establish alignment between components within an organisational system and the external environment (Nadler and Tushman, 1980; Carmeli *et al.*, 2010), this research identifies the components of the project organisation that need to be aligned for project success to be realised, and the internal and external factors that create challenges for the successful alignment of strategic objectives within a TMO.

7.3.2 Contribution to perception of project success

The second important contribution to theory is enabling a greater understanding of project success, as an outcome of the thesis. Whereas it is generally accepted that project stakeholders may have differing perceptions of project success, studies have yet

to match success criteria to the varied stakeholder types. Figure 6.3 presents a unique model of project success that identifies the varied success criteria within a TMO. This includes consideration of perceptions of all stakeholders involved in a construction project, comprising of the client, TMO member organisations and TMO actors. The model also identifies possible situations where tensions between the pursuits of conflicting success criteria may occur, a topic that has not been considered within previous studies.

The model, not only, contributes to a greater understanding of project success, but also contributes to the greater understanding of stakeholder motivations within a project context. Moreover, in considering the diverse stakeholders within a typical project, the model can be adapted for any project type, and is not constrained for use only within a TMO.

7.3.3 Contribution to the theory of temporary organisations

The third contribution to theory enhances understanding of temporary organisations to include TMOs. Lundin and Sodeholm's (1995) theory of temporary organisations makes no distinction between temporary organisational types. Rather, the assumption is made that all temporary organisations are characterised by the same general conditions (Jacobsson *et al.*, 2015). However, as demonstrated within the study, the idiosyncratic nature of the construction industry results in unique differences between a temporary organisation operating within a single organisational boundary and a TMO, where the boundaries of multiple organisations overlap.

Cherns and Bryant (1984) have previously defined the characteristics of a TMO through a pilot study proposing twenty points for consideration. This thesis empirically supports a number of Cherns and Bryant's (1984) points, but also draws a comparison between the characteristics of temporary organisations from the review of the literature, and the characteristics of TMOs emerging from the empirical findings of the study.

	Characteristics of Temporary Organisations	Characteristics of Temporary Multi-Organisations
Time	• Limited time to develop communities of practice and shared task relevance (Lindkvist, 2005) • Attention on immediate present (Bakker *et al.*, 2013) • Stress due as a result of limited time (Morley and Silver, 1977) • Pressure to deliver outcomes (Turner and Muller, 2003) • Limited time to foster group relations (Bryman *et al.*, 1987a)	• Participation within a TMO over different points in time. • Contracted to perform specified tasks to a predefined deadline, within a predefined budget • Deadlines considered normal in the industry.
Task	• Task complexity (Meyerson *et al.*, 1996) • Difficulty of task (Hanisch and Wald, 2011; Liu, 1999) • Non-repetitive tasks (Goodman and Goodman, 1976) • Uniqueness of task results in unfamiliarity of how to execute (Goodman and Goodman, 1976; Lundin and Soderholm, 1995) • Limited time to develop task familiarity (Morley and Silver, 1977)	• Focus on project complexity, including managerial processes and systems • Uniqueness relatively low, preference for repetitive tasks • TMO comprising of specialist skills
Team	• Do not anticipate working together in the future (Bennis, 1965; Goodman and Goodman, 1976) • Have never worked together in the past • Limited time to develop trust – swift trust (Meyerson *et al.*, 1996; Saunders and Ahuja, 2006)	• High mobility and prior working relationships. • Preference for partnering arrangements and repeat collaboration • Structural embeddedness through social networks
Transition	• Temporary organisation part of the permanent organisation (Jacobsson *et al.*, 2013)	• TMO detached from permanent organisation

Table 7.1: Distinctions between temporary organisations and TMOs

Table 7.1 identifies noteworthy differences between a temporary organisation and a temporary multi-organisation. These should be considered when conducting research into TMOs. The salient differentiation between the types is that TMO actors are employed under specific contractual conditions, determined within the procurement strategy. As such, accomplishment of tasks will take priority over social relations with other actors. However, as established across all cases within the study, the construction industry is also characterised by the high level of mobility among actors. Therefore, prior working relationships are likely, and, indeed actively encouraged through formal partnering arrangements and strong social networks through professional bodies. These

latter points are considered important for future studies on social behaviour and studies of social embeddedness involving TMO actors.

7.3.4 Contribution to project leadership

The fourth contribution to theory is within the study of project leadership. As previously discussed in Section 3.4, there is a lack of empirical studies investigating leadership styles within the context of projects. The definitive model of the thesis, in Figure 6.5, recognises the impact of client leadership on the strategy of the TMO.

The empirical research raises unique questions for studies of transactional and transformational leadership within a project environment. Firstly, as proposed by Tyssen *et al.* (2014), client project managers have little *de facto* authority for transactional leadership to be effective. Conversely, there is insufficient time within a construction project, where membership is at different points in the project life cycle, for the benefits of transformational leadership to evolve. As previously established within the research, actors and leaders within a TMO will focus on completion of tasks over development of relationships, and therefore, integration of tasks becomes difficult for the transformational leader. When transactional leadership is ineffective, TMO actors will revert to the conditions of contract, as demonstrated in Case Study A.

7.4 Contribution to practice

The thesis also makes a number of contributions to management practice. The hierarchy in Table 6.2 demonstrates how consultant and contractor organisations align their strategic objectives through the client's operational objectives for a construction project. This contradicts common perceptions within the construction industry that strategies of TMO member organisations will be conflicting. Instead, the research reveals that all component organisations within the TMO are dependant on the successful delivery of the construction project for strategies to be realised. The research did find conflicts between the TMO and the client, but the source of these derived from the procurement strategy, as a consequence of the competitive bidding process. Even within these circumstances, the TMO member organisation will seek to achieve the client's operational objectives, unless the strategy of the consultant, or contractor, is only short-term.

Secondly, The model of strategic alignment within a TMO, presented in Figure 6.5, identifies forces that influence the strategy of the TMO. Understanding of these influences will be particularly beneficial for project management practice. The model shows that TMO behaviour is not localised, but driven by the internal behaviours of the client organisation and the emergent influences within the external environment. Factors for consideration include, the strategic importance of the construction project that determines the deadline, the complexity of the project itself, and the structure of the TMO, in terms of task integration. The research also finds that strategy of the TMO is influenced by the long and short-term strategic objectives of the consultant and client organisations, and understanding of these would better support the management of projects.

The model in Figure 6.5 also makes explicit the impact of client leadership and behaviours on the strategy of the TMO. A critical lesson, from the findings of the study, for client organisations, is the need for efficient coordination of the TMO. Within public sector organisations, it is common to establish project boards as a governance mechanism. Within varied methodologies this is seen as best practice (APM, 2004). However, as demonstrated across the case studies informing this thesis, there need for a single point of contact between the project board and the TMO. The research shows that when a pluralistic client project board is responsible for instructing the TMO, directives received are often conflicting and ambiguous, which can result in frustration for the TMO and delays in the project.

7.5 Limitation

The research makes contribution to both theory and practice, as discussed in the preceding section. Despite these, the limitations of the research are acknowledged. Methodological limitations are identified in Section 4.7 and include the limitations in data collection and triangulation, where it is recommended by Eisenhardt (1989b), Denzin (1978) and King (1998) that multiple investigators collect, interpret and analyse data. However, this was deemed as inappropriate for PhD research where a single investigator is expected to conduct the research for award. Rigour was taken in the data collection and analysis thorough the case study protocol, summarised in Table 4.9 and the replication logic within the data collection.

The findings of the research were also limited by the available data collected. As discussed in Section 4.4.1, the four cases studies involved public sector projects. To ensure international and regional consistency, the construction projects were located within a 50-mile radius of each other. Perspectives were therefore taken from participants within a specific region of the UK, although it is accepted that cases from other parts of the UK might have presented additional findings, due to regional, economic and political differences. Furthermore, findings may be different to those that might emerge from commercial projects within the private sector.

Whereas, the investigation attempted to interview all relevant stakeholders within each case study, this was not possible. Due to the high mobility within the construction industry, some actors had since changed organisation and were not contactable. Others did not respond to the invitation for interview, or were not available for follow-up interview. Despite this, triangulation of data was employed and all interviews were transcribed as verbatim, for reliability.

Finally, the construction projects within each case study were also planned and executed at the height of 2008-2013 UK financial crises. As discussed within the thesis, the economic environment, at the time, did influence the strategic decisions and drivers of the clients, contractors and consultants within the study. There was also an impact on the availability of sub-contractors that was perceived as an external influence to the TMO strategy. Due to the limitation of time and resources to conduct the research for the thesis, the boundaries of the case study did not include perceptions of sub-contractors or utility supplies. Although, it is acknowledged that additional data from these external organisations may have provided interesting insight.

7.6 Further research

Taking into consideration the limitations of the research, identified in Section 7.5, areas for further research are identified.

The main focus of further research from the study would be to test the components of the theoretical model in Figure 6.5, to support its validation. The model of strategic alignment within the context of a TMO was developed from the qualitative findings from four case studies forming the research. Quantitative studies investigating each of the dimensions that influence the strategy would further elaborate on the themes

evolving from the research. Important areas of study include the impact of client behaviours and leadership on project strategy and project success. It would also be interesting to draw comparison of external environmental factors outwith the economic uncertainty that influenced strategies within this thesis. Within this area, future research could consider the strategic motivations of sub-contractors and utility providers. Both of which have received little attention in the literature.

The research also recognised that client complexity has a major effect on the alignment of strategic objectives. Very few studies have investigated the role of the client in achieving project success within a pluralistic client body. Studies investigating client influence have tended to perceive the client as a single entity. However, the growth in joint ventures and industry collaborations, would suggest that the client is becoming even more multifaceted. The model in Figure 6.5 could, therefore, be applied to settings where the project client consists of multiple organisations. This would increase the complexity of organisations seeking to align multiple strategic objectives through a single construction project.

The implications of the research are not only limited to the construction industry. The thesis has successfully explored the implications of multiple organisations being involved in a single project. Further research could investigate this phenomenon across other industries. This could include product development projects involving multiple firms, or service projects involving multiple agencies. Within this environment, issues extend to the leadership of the pluralistic client body, as well as, the leadership of the TMO.

7.7 Final conclusions

Jacobsson *et al's* (2015) follow-up paper to Lundin and Soderholm's (1995) theory of temporary organisations suggests a need to address the ambiguities and confusion regarding projects and temporary organisations. This thesis makes significant contribution by providing an additional perspective of how projects can be understood. Previous studies have predominantly focused on the temporary organisation formed within the boundaries of single organisation. Within these studies, models propose that strategy is set at the highest level of a strategic hierarchy and cascades down to be implemented through projects.

However, the review of the literature establishes a lack of empirical studies exploring the concept of alignment of projects with organisational strategy. Moreover, the literature does not adequately address the complexities of how temporary organisations realise an organisations strategic objectives. This study has set out to explore how varied organisations within a temporary-multi organisation attempt to align individual strategic objectives through a single construction project. In achieving this aim, the study exposes a number of ambiguities and difficulties organisations face when seeking to realise strategic objectives through a TMO.

These include the strategy of the TMO, strategic priorities, and actions taken to deliver a construction project. The study shows that these are dynamic and subject to internal and external influences. An important contribution is the recognition of clients influence on the strategic behaviours of the TMO and consequential success of project. At an organisational level, this includes formal governance structures and conditions of contract, but also includes project leadership and client behaviours towards the TMO. Moreover, the study clarifies some of the ambiguities pertaining to the concept of project success. Through the devolvement of models from the findings of the empirical research, the thesis identifies the varied and competing perceptions of project success, and how they relate to organisational strategy.

The thesis has challenged a number of common perceptions regarding projects and temporary organisations. Strategies between organisations comprising a TMO do not conflict, as the literature suggests. Instead, the research demonstrates alignment between strategic objectives. However, there are differences of opinion as to perceptions of project success and, therefore, how success of a project should be pursued. But, as demonstrated within the study, success of a project is time-dependant and perceptions of success change over time.

Therefore, this thesis has achieved its aims and objectives. Through the three stages of research design, shown in Figure 4.2, the thesis developed a theoretical foundation through an extant literature review on the strategic context of projects and temporary organisational forms. Themes emerging from the literature guided the empirical research conducted across four case studies of construction projects within the public sector. Models developed from the findings and analysis of the study makes

contribution to theory and practice of strategic alignment, effectiveness of governance mechanisms, TMO strategy, and perceptions of project success.

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APPENDIX A – INTERVIEW GUIDE

Case				**Date**	
Contact Type				**Interviewer**	
Section A					
1	**Name**				
2	**Company**			**Company Type**	
3	**Employment**	Permanent / Temporary			
4	**Position / role**				
5a	*At what stage did you join the project?*				
5b	*At stage did you finish on the project?*				
Section B – Strategic Alignment					
6	*What was the purpose of the project?*				
7	*What was the long-term benefit to (client) in pursuing the project?*				
8	*What were the strategic benefits to your (organisation/department/section) in taking part in the project?*				
9	*In your opinion how was success of the project measured?*				
10	*How did you personally measure project success?*				
11	*In your opinion were there any issues that affected project success from being fully realised.*				
12	*How did the short duration / imposed deadline of the project impact on the performance of the project?* *a. Completion of tasks (complexity)* *b. Behaviour of the team (trust)* *What was done in these situations*				
13	*How did the structure of the team (project organisation) impact on the performance / success of the project?* *a. Procurement process* *What was the reaction in these situations?*				
14	*In your opinion were there any conflicting objectives between organisations involved within the project?*				

APPENDIX B – CASE STUDY REGISTER

Case	Interviewee	Organisation	Role	E-mail	Contact Number	Interview Date	Transcribed	Coded

APPENDIX C – DATA SOURCE LOGS

C.1 Case Study A: New student residence

C.2 Case Study B: New 4-lane carriageway

C.3 Case Study C: Office and laboratory facility

C.4 Case Study D: New tourist visitor centre

Reference code

Case – Interviewee initials – date data collected – data type

C.1 Case Study A - Data Source Log

Reference No.	Source description	Data Type	Data Capture	Source	Organisation	Role	Date Collected
A-PMc-101214-intvw	Notes from interview	intvw	Unrecorded interview	PMc	Client	Finance Director	10/12/14
A-MD-031214-intvw	Transcript of interview	intvw	Audio recorded interview	MD	Client	Director of Campus Services	03/12/14
A-DW-270314a-intvw	Transcript of interview	intvw	Audio recorded interview	DW	Client	Project Manager	27/03/14
A-DW-170315b-intvw	Transcript of follow-up interview with DW	intvw	Audio recorded interview	DW			17/03/15
A-GC-231214-intvw	Transcript of interview	intvw	Audio recorded interview	GC	Client	Project Manager	23/12/14
A-AJ-270314-intvw	Transcript of interview	intvw	Audio recorded interview	AJ	Client	Project Manager	27/03/14
A-BG-240314a-intvw	Transcript of interview	intvw	Audio recorded interview	BG	Consultant	Operations Director	24/03/14
A-BG-131014b-intvw	Transcript of follow-up interview with BG	intvw	Audio recorded interview	BG			13/10/14
A-DL-270314-intvw	Transcript of interview	intvw	Audio recorded interview	DL	Contractor	Project Manager	27/03/14
A-CJ-280314-intvw	Transcript of interview	intvw	Audio recorded interview	CJ	Client	Director of Student Support	28/03/14
A-TD-240314-intvw	Transcript of interview	intvw	Audio recorded interview	TD	Client	Director of Hospitality	24/03/14
A-PW-071014-intvw	Transcript of interview	intvw	Audio recorded interview	PW	Consultant	Architect	07/10/14
A-MMc-291014-intvw	Transcript of interview	intvw	Audio recorded telephone interview	MMc	Contractor	Area Manager	29/10/14
A-MC-190314-intvw	Transcript of interview	intvw	Audio recorded interview	MC	Consultant	Quantity Survey	19/03/14
A-IG-190314-intvw	Transcript of interview	intvw	Audio recorded interview	IG	Consultant	CDM	19/0314
A-PMc-0210-report	PME Business Case	report	Copy of report	PMc	Client		27/05/15
A-CBA-0714-report	Report on Cost & Programme over-runs	report	Copy of report	CBA	Consultant		27/05/15
A-CS-0710-schedule	Development programme	programme	Copy of programme	CS	Consultant		27/05/15
A-HW-0311-report	Project Execution Plan	report	Copy of report	DW	Client		27/03/14
A-HW-0314-figure	University Committee Structure	diagram	University Website	HWU	Client		24/06/15

C.2 Case Study B - Data Source Log

Reference No.	Source description	Data Type	Data Capture	Source	Organisation	Role	Date Collected
B-GO-200814-intvw	Transcript of interview	intvw	Audio recorded interview	GO	Client	Section Engineer	20/08/14
B-AH-200814-intvw	Transcript of interview	intvw	Audio recorded interview	AH	Client	Resident Engineer	20/08/14
B-JW-230914-intvw	Transcript of interview	intvw	Audio recorded interview	JW	Contractor	Sub-Agent	23/09/14
B-LC-111214-intvw	Transcript of interview	intvw	Audio recorded interview	LC	Contractor	Finance Director	11/12/14
B-IW-220914-intvw	Transcript of interview	intvw	Audio recorded interview	IW	Contractor	Project Manager	22/09/14
B-SR-010914-intvw	Transcript of interview	intvw	Audio recorded interview	SR	Consultant	Operations Manager	01/09/14
B-AH-0713-doc	Presentation slides	document	Copy of slides	AH	Client		
B-GCC-0814-report	Summary Document	document	Copy of report	GCC			14/08/14
B-LES-0911-report	Annual Report	document	Copy of report	LES	Client		03/09/15
B-CGB-0608-report	Business plan	Report	Copy of report	CHW			04/09/15
B-LES-120910-report	Progress meeting No.1 minutes	Report	Copy of report	LES			22/08/14
B-LES-240211-report	Progress meeting No.5 minutes	Report	Copy of report	LES			22/08/14
B-GCC-293015-web	Local Authority Web site 1	Web	Web page	GCC			29/30/15
B-JV1-293015-web	Contractor Website 2	Web	Web page	JV1			29/30/15
B-GO-0915-email	E-mail correspondence	e-mail	Correspondence	GO	Client	Section Engineer	02/09/15
B-GCC-0312-report	Implementation Report	Report	Copy of report	GCC	Client		03/09/15
B-GCC-0809-report	Public Status Report	Report	Copy of report	GCC			09/09/15
B-GCC-210915-doc	Council Web site	document	web page	GCC	Client		21/09/15

C.3 Case Study C - Data Source Log

Reference No.	Source description	Data Type	Data Capture	Source	Organisation	Role	Date Collected
C-LMc-100414-intvw	Transcript of Interview	intvw	Audio recorded interview	LMc	Client	Project Manager	10/04/14
C-RA-110414-intvw	Transcript of Interview	intvw	Audio recorded interview	RA	Client	Head of Procurement, Estates and Facilities	11/04/14
C-RA-250914a-intvw	Transcript of follow-up interview with RA	intvw	Audio recorded interview	RA	Client		25/09/14
C-NS281114-intvw	Transcript of Interview	intvw	Audio recorded interview	NS	Contractor	Construction Director	28/11/14
C-RT161214-intvw	Transcript of Interview	intvw	Audio recorded interview	RT	Consultant	Senior Project Manager	16/12/14
C-DJ121214-intvw	Transcript of Interview	intvw	Audio recorded interview	DJ	Consultant	Associate Director	16/12/14
C-FW190315-intvw	Transcript of Interview	intvw	Audio recorded interview	FW	Consultant	BREEAM Assessor	19/03/15
C-BR170315-intvw	Transcript of Interview	intvw	Audio recorded interview	BR	Consultant	Architect	17/03/15
C-PH100414-intvw	Transcript of Interview	intvw	Audio recorded interview	PH	Client	Programme Office Manager/Project Assurance	10/04/14
C-NA040414-intvw	Transcript of Interview	intvw	Audio recorded interview	NA	Client	Head of Business Support	05/04/14
C-MC100414-intvw	Transcript of Interview	intvw	Audio recorded interview	MC	Client	Senior Ecologist	10/04/14
C-KMc-110414-intvw	Transcript of Interview	intvw	Audio recorded interview	KMc	Client	Space Planner	11/04/14
C-EPA0309-report	Estates Strategy	Report	Copy of report	EPA	Client		03/09
C-EPA0913-report	Project Closedown report	Report	Copy of report	EPA	Client		09/13
C-RT231015-email	E-mail correspondence	e-mail	Copy of e-mail	RT	Consultant	Senior Project Manager	23/10/15
C-EPA01209-report	Step Change Report	Report	Copy of report	EPA	Client		12/09

C.4 Case Study C - Data Source Log

Reference No.	Source description	Data Type	Data Capture	Source	Organisation	Role	Date Collected
D-TIC-041114-intvw	Transcript of Interview	intvw	Audio recorded interview	TIC	Client	Interpretation Project Manager	04/11/14
D-DMc011214-intvw	Transcript of Interview	intvw	Audio recorded interview	DMc	Client	Project Director	01/12/14
D-JR241114-intvw	Transcript of Interview	intvw	Audio recorded interview	JR	Client	Project Manager	24/11/14
D-CP271015-intvw	Transcript of Interview	intvw	Audio recorded interview	CP	Client	Learning Manager	27/10/15
D-DA220616-intvw	Transcript of Interview	intvw	Audio recorded interview	DA	Consultant	Senior Associate. Architect	22/06/15
D-CW011214-intvw	Transcript of Interview	intvw	Audio recorded interview	CW	Consultant	MD Interpretation Design	01/12/14
D-GMc2808150-intvw	Transcript of Interview	intvw	Audio recorded interview	GMc	Contractor	Project Surveyor	28/08/15
D-PC150415-intvw	Transcript of Interview	intvw	Audio recorded interview	PC	Consultant	Project Manager	15/04/15
D-NTC0610-report	Project Definition and Brief	Report	Copy of Report	NCT	Client		06/10
D-HEA0613-report	Project Control Document	Report	Copy of Report	HEA	Client		06/13
D-CG0511-report	Government Manifesto	Report	Copy of Report	CG	Client		05/11

APPENDIX D – INITIAL TEMPLATE

Category	Relative Research Questions		Code No	A priori theme
Strategic Objectives	Q1	What are the varied organisational strategies being pursued within a temporary multi-organisation?	**1**	**Organisational Strategies Objectives**
			1.1	Client Strategic Objectives
			1.2	Consultant Strategic Objectives
			1.3	Contractor Strategic Objectives
Client Complexity			**2**	**Strategic levels**
			2.1	Policy level
			2.3	Business level
			2.5	Operational level
Strategic alignment mechanisms	Q2	What mechanisms are implemented to maintain the alignment of a construction project with the client strategic objectives?	**3**	**Procurement Strategies**
			3.1	Contractual arrangements
			3.2	TMO Structure
			4	**Governance mechanisms**
			4.1	Governance Processes
			4.2	Client Structure
			4.3	Communication channels
Environmental Influences	Q3	How effective are these mechanisms in maintaining the strategic alignment of a construction project?	**5**	**Client Behaviours**
			5.1	Client Structure
			6.2	Client Leadership
			6	**External Environment**
			6.1	Supply Chain
			6.2	Construction Industry
TMO Strategy	Q4	How do varied TMO actors pursue strategic objectives within a single construction project?	**7**	**TMO Behaviours**
			7.1	TMO Time
			7.2	TMO Task
			7.3	TMO Team
			7.4	TMO Transition
Project success	Q5	How do the varied actors engaged within a TMO measure the success of a construction project?	**8**	**Project Success criteria**
			8.1	Cost
			8.2	Time
			8.3	Quality
			8.4	Stakeholder Satisfaction
			8.5	Business Success

APPENDIX E – FINAL TEMPLATE

Category	Research Questions		Code No	A priori theme
Strategic Objectives	Q1	What are the varied organisational strategies being pursued within a temporary multi-organisation?	1	Organisational Strategies Objectives
			1.1	Client Strategic Objectives
			1.1.1	Strategic Drivers
			1.1.2	Strategic Benefits
			1.2	Consultant Strategic Objectives
			1.3	Contractor Strategic Objectives
Client Complexity			2	Strategic levels
			2.1	Policy level
			2.3	Business level
			2.5	Operational level
Strategic alignment mechanisms	Q2	What mechanisms are implemented to maintain the alignment of a construction project with the client strategic objectives?	3	Procurement Strategies
			3.1	Contractual arrangements
			3.1.1	Contractor claims
			3.1.2	Contractor Autonomy
			3.1.3	Client control
			3.2	TMO Structure
			4	Governance mechanisms
			4.1	Governance Processes
			4.1.1	Project Boards
			4.1.2	Scrutiny monitoring
			4.2	Client Structure
			4.3	Communication channels
Environmental Influences	Q3	How effective are these mechanisms in maintaining the strategic alignment of a construction project?	5	Client Behaviours
			5.1	Client Structure
			5.2	Client Leadership
			5.3	Client Experience
			5.4	Trust
			5.5	Communication
			6	External Environment
			6.1	Supply Chain
			6.2	Construction Industry
TMO Strategy	Q4	How do varied TMO actors pursue strategic objectives within a single construction project?	7	TMO Behaviours
			7.1	TMO Time
			7.2	TMO Task
			7.3	TMO Team
			7.3.1	Integration
			7.3.2	Co-location
			7.3.3	Social networks
			7.4	TMO Transition

Project success	Q5	How do the varied actors engaged within a TMO measure the success of a construction project?	8	Project Success criteria
			8.1	Cost
			8.2	Time
			8.3	Quality
			8.4	Stakeholder Satisfaction
			8.4.1	End User Satisfaction
			8.4.2	Client Satisfaction
			8.5	Business Success
			8.6	Team Dynamics
			8.7	Health and Safety

APPENDIX F – THEMATIC MATRICES

F.1 Case Study A – Thematic Matrix

Category	Node No	Node	Description
Strategic Objectives	**1**	**Organisational Strategic Objectives**	
	1.1	Client Strategic Objectives	Client strategy to build high quality residences would command a higher rental income
	1.1.1	Strategic Drivers	Existing residencies unable to meet HMO regulations
	1.1.2	Reputation	Promise made to first year students to first year students to provide on campus accommodation
	1.1.3	Student experience	Contribution to growth strategy
	1.1.4	Revenue generation	Increase revenue through higher quality accommodation
	1.2	Consultant Strategic Objectives	Market entry strategy Working the university on previous projects
	1.3	Contractor Strategic Objectives	Market entry strategy - Working the university on previous projects
Client Complexity	2	**Strategic levels**	
	2.1	Policy level	Maintaining University reputation through provision of accommodation Enhancing growth strategy through provision of higher quality accommodation
	2.2	Business level	Estates - Specification of selected materials for reduced maintenance costs and life cycle costing Student Services - Attract students through higher quality of accommodation Hospitality - Generate income through conference facilities
	2.3	Operational level	Deliver project by deadline.
Strategic alignment mechanisms	**3**	**Procurement Strategies**	
	3.1	Contractual arrangements	Traditional procurement to maintain control of construction
	3.1.1	Claims by contactor	Contractor claims and as result of Incomplete design information
	3.2	TMO structure	Consultants under single PMC
	4	**Governance mechanisms**	
	4.1	Governance Processes	Oversight and Project Board unable to reach agreement within the client system

			Rushed proposals due to the deadlines imposed by the University Court
	4.2	Client structure	
	4.3	Communication channels	Formal communication channels and directives
	4.4	Stakeholder Engagement	University interface with students
Environmental influences	**5**	**Client Behaviour**	
	5.1	Client Structure	
	5.2	Leadership	Transactional leadership.
	5.3	Client Experience	Experience of the client to direct the design team
	5.4	Trust	PMC and MC trust in the client
	5.5	Communication	Communication methods to direct the design teams
	6	**External Environment**	
	6.1	Supply Chain	External contractors supply chain
	6.2	Construction Industry	State of the construction industry at the time of the project
	6.3	Market Conditions	Impact of the financial crises in the success of the project
TMO Strategy	**7**	**TMO Behaviour**	
	7.1	TMO Time	Effect of deadline on TMO behaviour
	7.2	TMO Task	Effect of the construction method on the project
	7.3	TMO Team	Stress of time on team
	7.3.1	Integration	Integration of the team
	7.3.2	Co-location	Co-location of team members
	7.4	TMO Transition	Time required for transition to meet short-term success criteria
Perceptions of project success	**8**	**Project Success criteria**	
	8.1	Cost	Delivery by budget
	8.2	Time	Delivery on schedule
	8.3	Quality	Delivery to specified quality
	8.4	Stakeholder Satisfaction	
	8.4.1	End User Satisfaction	Student satisfaction
	8.4.2	Client Satisfaction	Overall client satisfaction
	8.5	Safety & maintenance	CDM

F.2 Case Study B – Thematic Matrix

Category	Node No	Node	Description
Strategic Objectives	**1**	**Organisational Strategic Objectives**	
	1.1	Client Strategic Objectives	Stimulate and encourage regeneration in the East End of the city
	1.1.1	Strategic Benefits	Regeneration in terms of business and housing
	1.2	Consultant Strategic Objectives	Income. Enhance local presence for future work
	1.3	Contractor Strategic Objectives	Profit. Future work with Council and increased local work
Client Complexity	**2**	**Strategic levels**	
	2.1	Corporate level	Regeneration of the east end of the city.
	2.2	Business level	
	2.3	Operational level	
Strategic alignment processes	**3**	**Procurement Strategies**	
	3.1	Contractual arrangements	Design and Build enables transfer of risk to contractor
	3.1.1	Contractor claims	Few low claims made by contactor. Minor dispute but settled
	3.1.2	Contractor Autonomy	Autonomy for the contractor
	3.1.3	Client control	Loss of client control in design
	3.2	TMO Structure	Joint Venture - Synergy created through combination of expertise
	4	**Governance Mechanisms**	
	4.1	Governance Processes	Formal Project board and reporting hierarchy.
	4.1.1	Independent monitoring	Inspection by Scrutiny Board
	4.2	Communication	On-site location of client PM team
Environmental Influences	**5**	**Client Behaviours**	
	5.1	Leadership	On site supervision of works. Early engagement
	5.2	Client Control	Ownership over the design
	5.3	Stakeholder engagement	Collaboration with local stakeholder groups
	6	**External Environment**	
	6.1	Supply Chain	Issues with utilities who are not part of the TMO or operate under the same contractual conditions
	6.2	Construction Industry	

	6.3	Market Conditions	Low tender bid as a result of competitive market. Favours client
TMO Strategy	**7**	**TMO Behaviour**	
	7.1	TMO Time	Challenging programme. Deadlines normal in the industry. Stress caused by utility organisations outside of the TMO
	7.2	TMO Task	Highly complex task with additional items, including flood alleviation.
	7.3	TMO Team	Creating synergy through joint venture. Sharing of responsibilities. Skill differentiation in the TMO
	7.3.1	Co-location	Co-location of team members - improved social interaction
	7.3.2	Social networks	Prior relations and social networks
	7.4	TMO Transition	
Perceptions of project success	**8**	**Project Success criteria**	
	8.1	Budget & Schedule	Time and cost, primary measure of success. Delivered one week before the deadline
	8.3	Quality	Briefly mentioned by the contractor
	8.4	Safety & maintenance	Briefly mentioned as a critical success factor
	8.5	End User Satisfaction	Satisfaction of the local community and key stakeholders
	8.6	Client Satisfaction	Briefly mentioned by the contractor
	8.7	Team Dynamics	How well the team got on with each other

F.3 Case Study C – Thematic Matrix

Category	Code No	Node	Description
Strategic Objectives	**1**	**Organisational Strategic Objectives**	
	1.1	Client Strategic Objectives	
	1.1.1	Rationalisation	Savings on operating cost, creating a flexible working environment.
	1.1.2	Environment	Creating a flexible and transparent working environment
	1.1.3	Funding	Government funding for BREEAM and efficiency initiatives
	1.1.4	Lease	Favourable rental conditions
	1.2	Consultant Strategic Objectives	Enhance portfolio for future and continuous work
	1.2.1	Actor strategic objective	CV enhancement
	1.3	Contractor Strategic Objectives	Enhance portfolio and market entry into Laboratory fit- out
Client Complexity	**2**	**Strategic levels**	
	2.1	Policy level	Upgrading capability and working more efficiently
	2.3	Business level	Rationalise estate and deliver more flexible working patterns
	2.4	Operational level	Provision of central laboratory and office facility
Strategic alignment Mechanisms	**3**	**Procurement Strategies**	
	3.1	Contractual arrangements	Design and Build - Transfer of risk and cost certainty.
	3.2	TMO Structure	Novation of design team post contract
	4	**Governance Mechanisms**	
	4.1	Governance Processes	Creation of project board to oversee and direct TMO
	4.2	Communication channels	Through Board
	4.3	Stakeholder Engagement	End user consultation
Environmental Influences	**5**	**Client Behaviour**	
	5.1	Client Experience	Clients knowledge and experience in construction projects
	5.2	Leadership	Single point of contact between boards and TMO
	5.3	Resistance to change	End-user resistance
	6	**External Environment**	
	6.1	Market Conditions	Lower tender price

TMO Strategy	**7**	**TMO Behaviour**	
	7.1	TMO Time	Focus on completion for relocation project to commence
	7.2	TMO Task	Communication of end user requirements
	7.3	TMO Team	Efficient teamwork and integration
	7.4	TMO Transition	Completion to enable continuity of service
Project success	**8**	**Project Success criteria**	
	8.1	Time	Time, cost and quality
	8.2	Cost	
	8.3	Quality	Quality of design and fit for purpose
	8.4	End User Satisfaction	Staff survey feedback
	8.5	Client Satisfaction	Successful population, client relationships
	8.6	Team Dynamics	Positive team working relationships

F.4 Case Study D – Thematic Matrix

Category	Node No	Node	Description
Strategic Objectives	**1**	**Organisational Strategic Objectives**	
	1.1	Client Strategic Objectives	Conservation of historic monuments
	1.1.1	Strategic Drivers	Current exhibition dated and "not fit for purpose"
	1.1.2	National reputation	Government sponsorship
	1.2	Consultant Strategic Objectives	Market enhancement, market dominance
	1.2.1	Project profile	Show-case talent
	1.2.2	Actor strategic objective	Enhance CV
	1.3	Contractor Strategic Objectives	Portfolio enhancement
Client Complexity	**2**	**Strategic levels**	
	2.1	Policy level	Conserve the battle site and historic monuments
	2.2	Business level	Enhance public awareness of the site, increase financial stability
	2.2.1	Industry competition	Increase visitor numbers
	2.4	Operational level	Provision of new tourist visitor centre and innovative interpretation
Strategic alignment mechanisms	**3**	**Procurement Strategies**	
	3.1	Contractual arrangements	GC Works traditional contract and GC Works Design and Build
	3.2	TMO Structure	Individual consultant organisations
	3.2.1	Joint ventures	Client Joint venture
	4	**Governance Mechanisms**	
	4.1	Governance Processes	Creation of project board to oversee and direct TMO
	4.2	Collaborative working	Joint project management
	4.2	Communication channels	Through project manager
Environmental Influences	**5**	**Client Behaviour**	
	5.1	Leadership	Stakeholder/ team management, strong leadership
	6	**External Environment**	
	6.1	Political environment	Political implications of project
	6.2	Media attention	TMO protected by PM leadership

TMO Strategy	**7**	**TMO Behaviour**	
	7.1	TMO Time	Focus on completion for opening
	7.2	TMO Task	Task focus of TMO actors
	7.3	TMO Team	Different working patterns. Task focus causing tension between actors
	7.4	TMO Transition	Time required for transition to meet short-term success criteria
Perceptions of project success	**8**	**Project Success criteria**	
	8.1	Cost	Delivery by budget
	8.2	Time	Measured by multiple stakeholders
	8.3	Quality	Visitor perception of interpretation
	8.4	End User Satisfaction	Visitor feedback
	8.5	Client Satisfaction	Stakeholder and sponsor satisfaction