

**LEADERSHIP PRACTICES TO ADDRESS CULTURAL
AND BEHAVIOURAL CHALLENGES IN CONSTRUCTION
PARTNERING PROJECTS**

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DEDICATION

I dedicate this piece of research to the innocent war victims of my beloved motherland

DECLARATION

This thesis is submitted under the University of Salford rules and regulations for the award of a PhD degree by research. While the research was in progress, some research findings were published prior to this submission (refer to Appendix A).

The researcher declares that no portion of the work referred to in this thesis has been submitted in support of an application for another degree of qualification of this, or any other university or institution of learning.

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Niraj Thurairajah

January 2013

LIST OF ABBREVIATIONS

CEO	Chief Executive Officer
CIC	Construction Industry Council
DTI	Department of Trade and Industry
GDP	Gross Domestic Product
JCT	Joint Contracts Tribunal
KPI	Key Performance Indicator
M&E	Mechanical and Electrical
NAO	National Audit Office
NEC 3	New Engineering Contract 3
PFI	Private Finance Initiative
PPC 2000	Project Partnering Contract 2000
PPP	Public Private Partnership
TPC 2005	Term Partnering Contract 2005

ABSTRACT

Partnering and related forms of collaboration have been seen as a way of tackling fragmentation and lack of integration that have bedevilled attempts to improve project performance over the years. Despite the amount of interest shown in partnering, actual empirical research is sparse and much of the work is notable for its prescriptive tendencies and heavy reliance on anecdotal data with a focus on the experience of the exemplar organisations. Thus, it is important to adequately address and evaluate the challenges and potential problems in construction partnering. A synthesis of construction partnering literature shows that central to any successful partnering arrangement is the change in cultural and behavioural characteristics towards mutual trust and understanding. Therefore, it is essential to bring about cultural change, which encourages project participants to transgress conflicting interests and to build a shared culture. Leadership is seen as the source of beliefs and values that forms shared assumptions of organisational culture. Hence, it is important to focus on leadership practices to embed and transmit a collaborative culture in construction partnering projects.

This research investigates cultural and behavioural challenges via a systematic literature review and refines its root causes by collecting and analysing interview data from academic and industry experts. Content analysis of root causes and challenges were represented in the form of a cultural web diagram, and categorised into rituals and routines, stories, symbols, power, structure and control system related challenges. Content analysis of relevant leadership practices pointed out the significance of embedding and reinforcing leadership practices during the construction stage of a project to address cultural and behavioural root causes. This initial conceptual framework for leadership practices was then refined using a multiple case study research approach on UK construction partnering projects. This initial conceptual framework for leadership practices was then refined using a multiple case study research approach on UK construction partnering projects. The findings of this study indicate that a threefold leadership framework comprising ‘initial embedding mechanisms’, ‘continuous embedding mechanisms’ and ‘reinforcement mechanisms’ is essential to tackle cultural and behavioural challenges and their root causes in construction partnering projects.

CHAPTER 1 INTRODUCTION

1.1 Background

Construction in the UK is considered as one of the pillars of the domestic economy, with its capability to deliver the most difficult and innovative projects (Egan, 1998; Wolstenholme, 2009; Cabinet Office, 2011). Nonetheless there is deep concern that the industry as a whole is underachieving. Successive independent reviews of construction have emphasised the need to improve the culture, attitude and working practices of the industry (Latham, 1994; Egan, 1998; NAO, 2001; Fairclough, 2002; Strategic forum for construction, 2002, 2007; Construction Excellence, 2008; Wolstenholme, 2009; Cabinet Office, 2011). Partnering and related forms of collaboration have been seen as a way of tackling fragmentation and the lack of integration that have bedevilled attempts to improve project performance over the years (Bresnen and Marshall, 2000d; Laan *et al.*, 2011; Bemelmans *et al.*, 2012; Hughes *et al.*, 2012).

Many commentators argue that partnering can have a substantial, positive impact on project performance, not only with regard to time, cost and quality objectives, but also with regard to more general outcomes such as greater innovation, improved user satisfaction and reduced confrontations between parties, thus enabling an open and non-adversarial contracting environment (Latham, 1994; Bennett *et al.*, 1996; Black *et al.*, 2000; Bresnen and Marshall, 2000b; Chan *et al.*, 2003b; Shek-Pui Wong and Cheung, 2004; Anvuur and Kumaraswamy, 2007; Gadde and Dubois, 2010a). Recent introduction of Building information modelling (BIM) has also revealed the importance of early engagement of project stakeholders, mutual trust and collaborative working practices within construction projects. Studies show that the adoption and use of BIM will be facilitated by a collaborative climate reinforced by the contractual relations when projects are facilitated by a partnering approach (Linderoth, 2010; Porwal and Hewage, 2013).

Partnering has been described as a long term commitment between two or more organisations for the purpose of achieving specific business objectives by maximising the effects of each participant's resources. While there is an agreement about this overall philosophy of partnering, there are varying views on its features. This includes a wide

range of concepts capturing culture, behaviour, attitudes, values, practices, tools and techniques. Despite the fact that commentators place considerable emphasis upon the importance of changing attitudes, improving interpersonal relationships and transforming organisational cultures, very little of the research has explored the social and psychological aspects associated with the successful integration of partnering (Bresnen and Marshall, 2000d; Wood and Ellis, 2005). Several authors look for various means to understand and improve construction partnering to enhance its performance (Lau and Rowlinson, 2009; Bygballe *et al.*, 2010). Central to any successful partnering arrangement is the change in attitudinal and behavioural characteristics towards mutual trust and understanding.

1.2 Research need and justification

Since partnering is seen as changing behaviours and attitudes, cultural transformation cannot be forgotten in the process. Much of the literature tends to presume that cultural alignment is a prerequisite for partnering. However, it is certainly not easy to bring about cultural change to adopt a new set of behaviours as a consistent way of working among people. Also the synthesis on partnering challenges and problematic issues shows the significance of cultural and behavioural challenges inhibiting the adoption of partnering arrangements. Furthermore, common to all partnering relationship is the formulation of mutual objectives, trust and an understanding of each other's commitments. However, it is less than clear about the way in which these essential cultural and behavioural characteristics are encouraged in construction partnering projects (Bresnen and Marshall, 2000d). Therefore, it is essential to bring about cultural change encouraging project participants to transgress the conflicting interests and to build shared culture.

Schein (2004) conceives culture as consisting of three major levels; artifacts, espoused beliefs and values and basic underlying assumptions. While artifacts represent the visible organisational structures and processes, espoused beliefs and values symbolise strategies, goals and philosophies. However, to gain a deeper level of understanding or to predict the future behaviour correctly one must attempt to get at its shared basic assumptions and 'taken for granted' perceptions. Leadership is originally the source of the beliefs and values that gets a group moving with its internal and external problems (George *et al.*, 1999; Schein, 2004; Hartmann and Khademian, 2010). Once a leader's proposals continue

to work, they gradually come to be shared assumptions of organisational culture. Together with the understanding of the current state of culture, leadership has the most significant role to play in the transformation of attitudes (Smith, 2003). Also it is important to focus on leadership practices rather than leadership styles to reinforce a collaborative culture in construction partnering projects by initiating and changing the project culture (Thurairajah *et al.*, 2007). A lack of empirical evidence indicates the necessity of leadership research in construction partnering projects to achieve specific business objectives by maximising the effectiveness of each participant's resources and establishing ongoing business relationships. Also the existing research fails to concentrate adequately on the complex relationship between individual or group behaviour and organisational culture (Barlow *et al.*, 1997; Bresnen and Marshall, 2000c) which, nevertheless lies at the heart of many prescriptions for improving collaboration within the industry (Bennett and Jayes, 1998). This study probes leadership as the response to address challenges related to complex relationships of culture and behaviour in construction partnering projects.

1.3 Aim and objectives

The aim of the research is to identify and develop a framework of appropriate leadership practices to address the cultural and behavioural challenges associated with partnering projects in construction. The following objectives are formulated to address this aim:

1. Investigate the cultural and behavioural challenges in construction partnering projects
2. Identify the root causes of cultural and behavioural challenges in construction partnering projects
3. Establish 'leadership practice areas' to address cultural and behavioural challenges and its root causes in construction partnering projects
4. Evaluate 'leadership practices' to address cultural and behavioural challenges and its root causes in construction partnering projects
5. Develop a framework of leadership practices to address the root causes of cultural and behavioural challenges in order to embed and reinforce a collaborative culture within construction partnering projects.

The following research methodology is used to fulfil the aim and objectives of this study.

1.4 Research methodology

The hierarchical model of research methodology by Kagioglou *et al.* (1998) is used to define the research methodology. Within this nested approach, the research philosophy found at the outer ring ‘guides and energises the inner research approaches and research techniques’. This research aims to interpret and increase the understanding of leadership practices to address the cultural and behavioural challenges. This is largely a theory building attempt by inductive methods of data gathering and it focuses on an in-depth study within an uncontrolled environment. Furthermore, research involves the investigation of complex interaction between leaders, followers, teams and processes in a real life context. This leads to research the subjective aspects of human activity, focusing on the meaning rather than measurement of leadership phenomenon. Involvement of leadership phenomenon holds a very high degree of belief that the reality depends on the mind. As such, it disqualifies itself from embracing a strong positivist approach and takes a phenomenological stance as the appropriate philosophical underpinning. This led to the identification of appropriate research approaches and research techniques to collect and analyse data.

The operational aspects of this research were implemented based on the principles of the “hermeneutics spiral”. In accordance with this principle, cultural and behavioural challenges were initially identified via a systematic literature review which was regarded as the pre-understanding to the first stage of the empirical investigation, conducted in the form of a series of expert interviews. As part of the expert interviews, opinion regarding the leadership practices to address cultural and behavioural challenges and its root causes were collected. The findings from this analysis formed the pre-understanding for the second stage of the empirical investigations via two long term partnering case studies. The requirement to analyse leadership practices in a real life context to address the cultural and behavioural challenges without controlling actual behavioural events justifies the selection of case study as the appropriate main research approach (Thurairajah *et al.*, 2006d).

In terms of the data collection methods, semi structured interviews were selected as the main data collection technique supported with document reviews within case study organisations. Case study protocols, consistent interview guidelines, and the preparation of a case study database were designed to maintain the reliability and validity of the results.

Content analysis was used to code the textual data gathered from the semi structured interviews. Initial open coding, focused coding and thematic coding were performed to build and refine theory. To facilitate the data analysis process, computer software packages such as NVivo, Inspiration and Decision Explorer for content analysis and cognitive mapping were used.

1.5 Contribution to knowledge

This research intends to contribute to the existing knowledge by theory building. As central to any successful partnering arrangement is the change in attitudinal and behavioural characteristics towards mutual trust and understanding, it is important to understand related challenges. Initially, the research identifies cultural and behavioural challenges and its root causes in construction partnering projects. This understanding contributes to the existing body of knowledge in construction partnering by providing a cultural and behavioural perspective to the related issues and challenges. Furthermore, lack of empirical evidence of leadership literature in construction and dearth of construction partnering related leadership studies highlights the need for leadership research in construction partnering projects. Hence, the research proposes a better understanding of leadership practices and the integrated framework of leadership to address cultural and behavioural challenges in construction partnering projects. This contribution to the existing body of knowledge on construction related leadership will also provide the understanding of the ways and means of reducing the adversarial culture in the UK construction industry.

1.6 Organisation of the thesis

The thesis is structured under the following chapters:

Chapter 1: Introduction

Chapter one provides an introduction to the whole thesis including background information that helped in the initiation of the study, justification of the research, aim and objectives, introduction to the research methodology and contribution to knowledge by the study.

Chapter 2: Literature Review

Chapter two provides a detailed literature review on key concepts pertaining to the study, namely, construction partnering, organisational culture, leadership and cultural change to address cultural and behavioural challenges.

Chapter 3: Research Methodology

Chapter three describes and justifies the methodology followed in this research, by using a modified version of the “nested approach”. Within this approach, the research techniques are nested under the research approach and the approach is nested within the research philosophy. The chapter also justifies adopting expert interviews and the case study research approach which formed the empirical investigation of this research.

Chapter 4: Data Analysis: Cultural & Behavioural Challenges

Chapter four presents the data analysis and research findings collected via systematic review and expert interviews regarding cultural and behavioural challenges and its root causes. They are presented in the cultural web format to provide a structured perspective of cultural and behavioural challenges in construction partnering projects.

Chapter 5: Data Analysis: Leadership Practices to Address Cultural & Behavioural Challenges

Chapter five provides the data analysis and research findings collected via expert interviews and the multiple case study approach regarding leadership practices to address cultural and behavioural challenges. The conceptual framework developed from the literature synthesis was refined via expert interviews and a case study approach to present a leadership framework to embed and reinforce a collaborative culture within construction partnering projects.

Chapter 6: Research Findings

Chapter 6 presents an overview of the empirical findings of this research from expert opinion survey and case study approaches.

Chapter 7: Conclusions

Chapter seven draws conclusions for the aim and objectives of the study based on the empirical investigations. It also presents the limitations of the study and recommends future areas of research.

1.7 Summary and link

As the introductory chapter of the thesis, this chapter provided an overview of the research including the background of the study and the justification of selection of this particular research area. Having presented the aim and objectives of the study, it provided a summary of the research methodology adopted for the study. Finally, the expected contribution to knowledge was described while outlining the structure of the thesis.

The next chapter presents the literature review and the synthesis, establishing the position of construction partnering and exploring culture and leadership concepts to bring together the related concepts to embed collaborative culture within construction partnering projects.

CHAPTER 2 LITERATURE REVIEW

2.1 Introduction

This chapter aims to present the literature synthesis of the undertaken research, mainly concentrating on construction partnering, culture and leadership theories. First this chapter explains the emergence and concepts of partnering to form the foundation for the growth of partnering in the UK. Further to strengthen partnering concepts, its benefit and critical success factors are analysed and supported with a study on partnering challenges. The next section provides the foundation for understanding organisational culture in the form of its standpoints and elements before looking at organisational activities through the cultural lens. Subsequently, the ‘cultural web’ is recognised as an appropriate approach to understand changes required in organisational strategic activities to accommodate cultural changes. This leads towards the discussion on interconnection and interdependency between culture and leadership. The next section demonstrates the leadership paradigms and the philosophy behind this social construct to portray the metaphysical cognitive aspect. Furthermore, the prerequisite to identify leadership practices rather than leadership styles is illustrated through construction team behaviour and performance. Finally a theoretical framework is proposed to capture leadership practices in partnering projects.

2.2 Construction partnering

2.2.1 The emergence of partnering

Construction in the UK is considered as one of the pillars of the domestic economy, with its capability to deliver the most difficult and innovative projects (Wolstenholme, 2009; Cabinet Office, 2011). Nonetheless there is deep concern that the industry as a whole is underachieving. For the last two decades there have been great concerns about the performance of the UK construction industry, culminating in the seminal publications of the Latham (1994) report and the Egan Construction Task Force (1998) report, both commissioned by the UK government. Problems such as low and unreliable demand and profitability, lack of research and development, inadequate investment in training, its current approach to the usage of tender price evaluations, an adversarial culture and

fragmented industry structure, are widely recognised. These problems must be addressed if the industry is to modernise and to improve performance (Latham, 1994; Egan, 1998; NAO, 2001; Santos and Powell, 2001; Fairclough, 2002). However, the construction industry has shown progress in addressing these issues. In 2002, Sir John Egan, in his ‘Accelerating Change’ report (Strategic forum for construction, 2002), indicated that “... *projects clearly show that the targets we set were realistic, and that when achieved the result brings benefit to all. I very much welcome the progress made*”. He went on to urge the UK construction industry to continuously improve its performance through the use of integrated teams. A similar notion was presented regarding considerable progress towards integration in the ‘Profiting from Integration’ report (Strategic forum for construction, 2007). Even though industry has made some strides in addressing these issues these reports urge the UK construction industry to improve continuously (Strategic forum for construction, 2002, 2007). These successive independent reviews of construction have emphasised the need to change the culture, attitude and working practices of the industry (Construction Excellence, 2008; Wolstenholme, 2009; Crespin-Mazet and Portier, 2010; Laan *et al.*, 2011; Carrillo *et al.*, 2012). Construction Excellence and the Construction Industry Council (CIC) continue to push towards these improvements in the industry.

Change in the industry tends to be driven by large projects that have the backing of the major clients and government, as a means to champion better performance (NEDO, 1988; Latham, 1994; Cox and Townsend, 1998; Egan, 1998; Naoum, 2003; Alderman and Ivory, 2007). Large scale, repeat projects provide an incentive for clients to drive change to achieve efficient, safe, productive and profitable outcomes. As such, both private and public sector clients concluded that the construction industry needs to reflect the best practices of the manufacturing industry to provide a satisfactory product. Perhaps the Latham report (1994) has proved to be the most significant milestone that indicated the construction industry, and especially public sector, should change procedures and methods to incorporate the concept of ‘partnering’. Latham’s proposals were undoubtedly influenced by the NEDC (1991) and CII (1991) reports. This initiative was further reinforced by Egan (1998) by pointing-out that the UK construction industry languishes in the same unfavourable condition of that of the 1960s UK automobile industry. Partnering has been endorsed as one technique that could be easily adopted from ‘design to

manufacture' industries such as the car industry and from retailing, and adapted, it has been argued, to give considerable benefits to all partners involved (NAO, 2001).

In the last decade there has been an enormous amount of interest in the use of partnering and to understand the factors leading to inhibiting successful collaboration amongst construction firms (Wood and Ellis, 2005; Bresnen, 2007; Ingirige and Sexton, 2007; Lu and Yan, 2007; Eriksson, 2010). Partnering and the related forms of collaboration have been seen as a way of tackling fragmentation and lack of integration that have bedevilled attempts to improve project performance over the years (Bresnen and Marshall, 2000d; Bresnen, 2010). It seeks to re-design relations between actors in projects by promoting the use of collaborative, more open, less managerial and less hierarchical relationships (Alderman and Ivory, 2007). Many commentators argue that partnering can have a substantial positive impact on project performance, not only with regard to time, cost and quality objectives, but also with regard to more general outcomes such as greater innovation, improved user satisfaction and reduced confrontations between parties, thus enabling an open and non-adversarial contracting environment (Latham, 1994; Bennett *et al.*, 1996; Bennett and Jayes, 1998; Bresnen and Marshall, 2000b; Cheung *et al.*, 2003a; Yeung *et al.*, 2007).

2.2.2 Concepts of partnering

According to Moore (1999), contracting relationships can be seen in a continuum with 'spot buy' where transactions are purely incidental at one end, whilst 'partnership' at the other end under which the contracting organisations function cooperatively as a team to accomplish the transaction objectives (Figure 2-1). Partnership appears to be a form for encouraging integration of the project team and creating competitive advantage to all that participate in the project by building stronger personal relationships and trust based on goodwill and cooperation. According to Naoum (2003), this concept originated from Japan and the USA from the early 1980s where team building, cooperation and equality, rather than the single-sided relationship of adversaries to a project, were encouraged. A consistent theme discerned through the early construction industry commissioned reports was of fragmentation, short-termism, a lack of trust and a lack of collaboration within the client/design/construction team (Banwell, 1964; NEDO, 1988; Latham, 1994; Egan, 1998; NAO, 2001; Fairclough, 2002). These shortfalls were leading to consistently low levels of

performance in areas such as cost, time, quality, running costs and fitness for the end user. As a result, when partnership/partnering was first debated in the US (CII, 1989, 1991) it was received with a high level of enthusiasm in the UK (NAO, 2001).

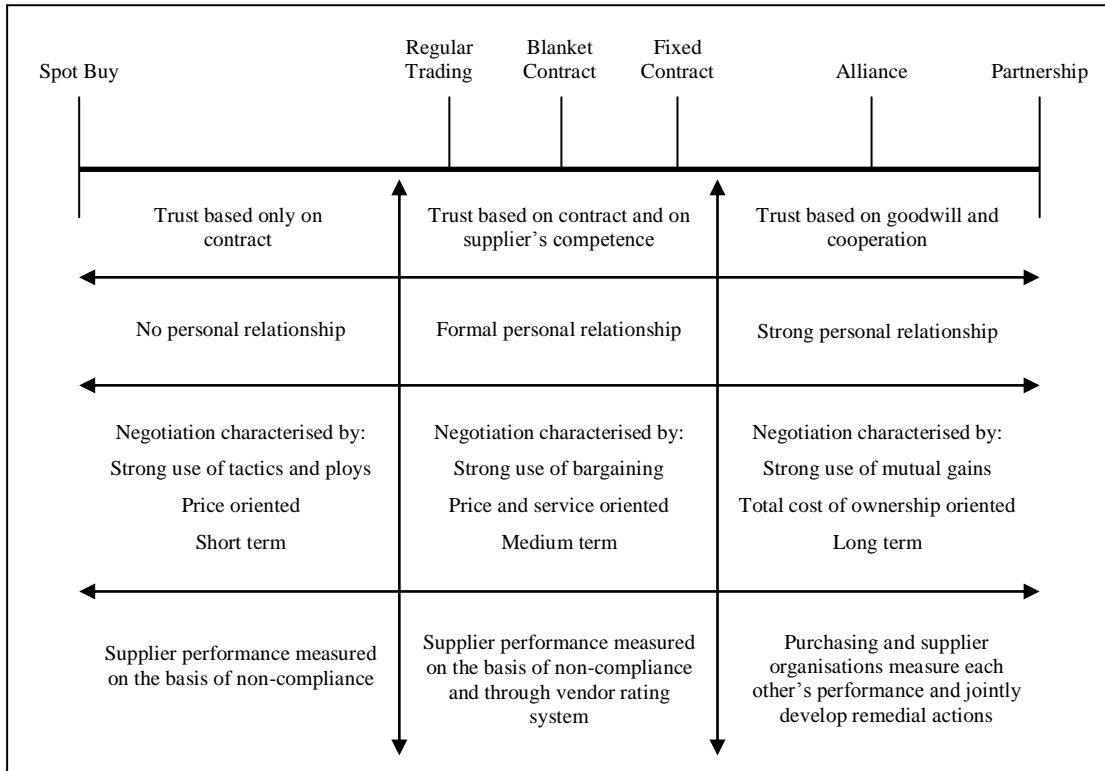


Figure 2-1: Contracting relationship continuum (adopted from Moore, 1999)

As such, partnering has steadily gained popularity from the early 1990s in the UK. Radical changes in the way that the construction industry performs and provides services to customers, particularly those in the public sector have been supported by the British Government. As previously stated, both the private and public sectors in the UK contributed towards the 'client driven' change (Latham, 1994; Egan, 1998; Naoum, 2003; Alderman and Ivory, 2007). Since then, research into construction partnering has become very widespread and has been seen as a primary management strategy for improving organisational relations and project performance. However, one thing that becomes clear from the literature synthesis is that there are many definitions of partnering in construction and that could cause major problems in its implementation (Chan *et al.*, 2003a; Eriksson, 2010)

2.2.3 Partnering – the definitions dilemma

Early definitions of partnering came from The US Construction Industry Institute (CII, 1989) where it was defined as *'A long-term commitment between two or more organisations, for the purpose of achieving specific business objectives, by maximising the effectiveness of each participant's resources'*. It also emphasised the requirement of changing traditional relationships to a shared culture without regard for organisational boundaries, while the relationship is based on trust, dedication to common goals and on the understanding of each other's individual expectations and values. Expected benefits included improved efficiency and cost effectiveness, increased opportunity for innovations and the continuous improvements of quality products and services. This primary concern to maximise effectiveness and efficiency opened the gateway towards new management improvement techniques (NAO, 2001). Similarly, partnering has been defined as *'a long-term commitment between two or more organisations for the purpose of achieving specific business objectives by maximising the effectiveness of each participant's resources'* (NEDC, 1991).

However, notwithstanding these definitions, different types of partnering relationships developed in the last decade. According to Matthews *et al.* (2000), there are no fixed definitions used when defining partnering in construction although common themes/elements prevail. He also noted that goals and objectives, trust, problem resolution, commitment, continuous evaluation, group working and teams, equity, shared risk, win-win philosophy, collaboration, were common elements raised in partnering literature. While there is an agreement about the above stated elements of partnering, there are varying views on its features. This includes a wide range of concepts capturing culture, behaviour, attitudes, values, practices, tools and techniques (Bresnen and Marshall, 2000d; Bygballe *et al.*, 2010). According to Crowley and Karim (1995), partnering can also be looked at as a process/mean that leads to the intended results. In that regard partnering can be defined in one of two ways:

- by its attributes such as trust, shared vision, and long-term commitment; and
- by its process, whereby partnering is seen as a verb and includes developing mission statements, agreeing goals and conducting partnering workshops.

Perhaps the most widely accepted definition is that offered by Bennett and Jayes (1998) in the seminal work ‘the seven pillars of partnering: a guide to second generation partnering’ (Figure 2-2). Here, the idea of partnering revolves around three key principles applied by project teams, identified as:

- agreeing mutual objectives to take into account the interests of all the firms involved
- making decisions openly and resolving problems in a way that was jointly agreed at the start of a project, and
- aiming at targets that provide continuous measurable improvement in performance from project to project.

They further extended their suggestions to the second generation style of partnering where ‘partnering is a set of strategic actions which embody the mutual objectives of a number of firms achieved by cooperative decision making aimed at using feedback to continuously improve their joint performance’. They established strategy, membership, equity, integration, benchmarks, project processes and feedback as the ‘seven pillars of partnering’ to form a controlled system to deal with rapidly changing markets and technologies with the combination of efficiency and innovation.

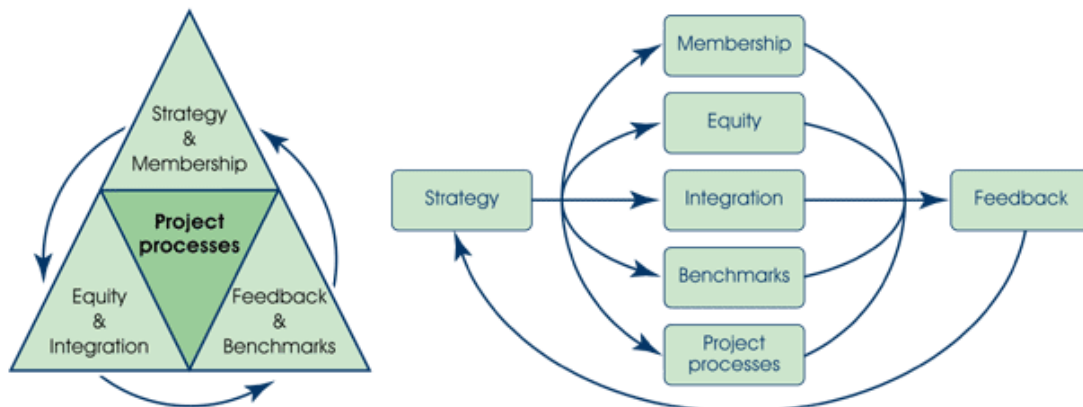


Figure 2-2: The seven pillars of partnering (adapted from Bennett and Jayes, 1998)

According to Naoum (2003) partnering is a concept which provides a framework for the establishment of mutual objectives among the building team with an attempt to reach an agreed dispute resolution procedure as well as encouraging the principle of continuous improvement. Thus, partnering is intended to reduce the adversarialism which is said to be typical in the industry and which has confounded previous attempts to encourage better

integration and cooperation between contractual partners (Latham, 1994; Egan, 1998; Bresnen and Marshall, 2000c; Aarseth *et al.*, 2012). Li *et al.* (2001) broadens this relational perspective by defining partnering as an establishment of an informal group among construction partners which creates non-legitimate but permanent relationships and is used to resolve disruptive inter-organisational conflicts.

Furthermore, mutual trust and understanding of each others' commitments appears to be the prerequisites of changing traditional relationships to a shared culture in partnering (Bresnen and Marshall, 2000b; Naoum, 2003; Hartmann and Bresnen, 2011). Ultimately partnering is about the management of a relationship that must be trust-based (Moore, 1999; Aarseth *et al.*, 2012). Bresnen and Marshall (2000d) reinforce the requirement for the change in attitudinal and behavioural characteristics to achieve mutual trust. Barlow *et al.* (1997) succinctly argue that, to achieve mutual trust, organisations must ensure that individual goals are not placed ahead of the team alliance. He also supports the idea of 'gain-sharing' which effectively relates improvements back to all the participants. All these point out that partnering is built upon the attitudinal and behavioural characteristics of participants to move away from traditional adversarial culture of the construction industry and to lead towards mutual trust.

2.2.4 Benefits attributable to partnering

Several studies indicate that there is little doubt about the positive aspects of implementing partnering arrangements (Wood and Ellis, 2005). Bennett and Jayes (1998) suggest that performance, in terms of cost, time, quality, build-ability, fitness-for-purpose and a whole range of other criteria, can be dramatically improved if participants adopt more collaborative ways of working. Furthermore, they illustrate the ways to create undefined win-win relationships which involve a sophisticated strategy and require a willingness to improve the joint performance. Their research cites a remarkable potential savings of 40–50% in both cost and time (Bennett and Jayes, 1998; Wood and Ellis, 2005). However, the benefits were often cited in terms of cost and time (Naoum, 2003) ignoring the other benefits to the team players, which are more difficult to assess. This section briefly identifies and illustrates the common benefits of partnering cited in various partnering related literature.

Most of the research lists cost savings as the main advantage in employing partnering in construction. Chan *et al.* (2003b) suggest that partnering has great potential to improve cost performance and reduce the risk of budget overruns. There are many reasons quoted for better cost performance, such as: alleviating rework; reduction in variation; lower change order rates; maximised value engineering; reduction in costs of developing and supporting productive relationships; less administrative and paper work; reducing scheduled time; reduction in scope definition problems, effective problem solving, and shared project risk (Albanese, 1994; Hellard, 1996; Black *et al.*, 2000; Chan *et al.*, 2003b; Ali *et al.*, 2010; Tang *et al.*, 2010). Better time control and reduced dispute and litigation contribute towards improved cost performance.

According to Chan *et al.* (2003b), an effective partnering agreement improves project quality by replacing the potentially adversarial traditional relationship and defence case building with an atmosphere that fosters a team approach to achieve a set of common goals. Partnering also provides a way for all parties to develop continuous quality improvement (Meng, 2012). With this joint effort and long-term focus, barriers to quality improvement can be eliminated. Hellard (1996) suggests that partnering can increase the potential for innovation by encouraging partners to evaluate advanced technology for its applicability. These in turn produce high quality construction and service and reduce engineering rework (Black *et al.*, 2000; Li *et al.*, 2001). As one of the other quality benefits, the safety performance can be enhanced as partners better understand each other, taking joint responsibility to ensure a safe working environment for all parties (Chan *et al.*, 2003b).

Working with suppliers can improve the capacity of the organisation to meet the client's programme, quality, flexibility and cost requirements. According to Black *et al.* (2000), one of the key benefits of partnering is the resultant synergy between project participants, enabling constant improvement in the key variables. In particular, the early involvement of contractors in the design stage can assist in constructability input and maximising value engineering, thus improving both cost and schedule (Bresnen and Marshall, 2000d). Also, a fair and equitable attitude from project participants jointly resolves many disputes, discrepancies and changed conditions which arise during construction. Gransberg and

Dillon (1999) found that fewer numbers of liquidated damages were imposed on the partnered projects than the non-partnered ones.

As the partnering literature points out, a mechanism for problem solving is an inherent part of the concept. Thus, partnering aims to reduce adversarial relationships that will allow a focus on mutual goals to the benefit of both parties (Black *et al.*, 2000; Naoum, 2003). This encourages mutual trust and sharing which results in closer relationships, providing a better environment for the project (Green, 1999; Chan *et al.*, 2003b; Ali *et al.*, 2010). An improved culture enhances open communication between the project participants, resulting in the elimination of blame shifting. Improved customer focus, augmented involvement of team members and joint satisfaction of stakeholders are achieved through this.

However, there is a tendency within the partnering literature to concentrate on success stories (Wood and Ellis, 2005). Conflict and failure could occur by a fundamental deviation in goals, especially in relation to accountability, thus hindering all cooperation that may have been attained by the partnering process (Ng *et al.*, 2002a). Anvuur and Kumaraswamy (2007) claim that implementation of partnering within and across organisational contexts has serious difficulties. Furthermore, there is case evidence of the failure of partnering to meet performance expectations in construction (Bresnen and Marshall, 2000b). Thus, it is important to adequately address and evaluate the challenges and potential problems in construction partnering.

2.2.5 Partnering challenges and problematic issues

The concept of partnering overhauls the ethics of traditional contracting with the paradigm shift towards cooperative and caring environments. According to Naoum (2003) successful partnering could attain a win-win solution and gain sharing. In general, with a cultural shift in attitudes, project partnering can be successful and bring benefits to the stakeholders involved in the project partnering process (Ng *et al.*, 2002a). However, changing traditional relationships to shared culture requires mutual trust and dedication to common goals (Dainty *et al.*, 2001b; Wood, 2005; Wood and Ellis, 2005). An absence of mutual trust and scepticism within participants may result in various problematic issues.

According to Lendrum (1998 cited Ng *et al.*, 2002a) a lack of open and honest communication may lead to degradation in the stakeholders' ability to efficiently resolve any problems. Thomas *et al.* (2002a) identified lack of empowerment and technical knowledge from the client's side and usage of competitive tendering, failure to include key suppliers and subcontractors together with lack of training as some of the main problematic issues in partnering projects. They argued the role of client as the head facilitator of the partnering arrangement is to take a leadership role, and ensure full commitment and correct facilitation throughout the entire duration of the project. It was identified that the majority of problematic issues experienced in project partnering arrangements was related to the commitment provided to the attitudinal change and procedural implementation required in efficient project partnering (Ng *et al.*, 2002a).

As discussed, central to any successful partnering arrangement is the change in attitudinal and behavioural characteristics towards mutual trust and understanding. Green and McDermott (1996 cited Bresnen and Marshall, 2000b) argue the attitudes and the behaviour evident in the construction industry are deeply ingrained and that it is difficult to engineer any rapid movement away from such an embedded culture. According to Li *et al.* (2001) partnering requires a long-term strategic plan with cultural change intervention in order to move beyond a traditional discrete project nature. In effect, the development of trust between organisations is seen as a function of the length of relationship between them, and the mechanisms that led to this alignment are viewed largely as informal. On the other hand, researchers believe that it is possible to bring about change over the timescale of a single project suggesting the view that partnering can be engineered and does not have to evolve naturally (Bennett *et al.*, 1996; Bresnen and Marshall, 2000d). Despite the separation between the above mentioned informal developmental and formal instrumental views to alter the behaviour, behaviour is considered as the "*result of conscious choices and actions and a complex interplay between structural imperatives and their subjective interpretation and enactment*" (Bresnen and Marshall, 2000d: p. 233). Therefore, it is important to explore both formal and informal mechanisms as a means to improve collaborative culture within partnering arrangements.

Since partnering is seen as changing behaviours and attitudes, cultural transformation cannot be forgotten in the process. Much of the literature tends to presume that cultural

alignment is a prerequisite for partnering. However, it is certainly not easy to bring about cultural change to adopt a new set of behaviours as a consistent way of working among people (Ankrah *et al.*, 2009). Atkinson (1990) identified fear, perceived loss of control, difficulty in learning to do the things differently, uncertainty, addition in work and unwillingness to commit as the reasons for people to resist change. Hill and McNulty (1998) portray fear and uncertainty as the main barriers to change. Conceptualisation of the relationship between partnering and culture (Bresnen and Marshall, 2000d), resistance to change from traditional, adversarial and exploitative ways (Bresnen and Marshall, 2000c; Gadde and Dubois, 2010b), lack of cooperation based upon fundamental differences in interests between the parties to contract and profitability and uncertainty issues can be considered as some of the reasons to resist cultural change towards collaborative relationships. Furthermore, Cheung *et al.* (2003) highlight unwillingness to commit fully to close, long term relationships and mistrust can hinder the cultural and behavioural change process in the industry.

2.2.6 Critical success factors of partnering

Critical success factors are the key areas that are essential for management success. Cheng *et al.* (2000) suggested that partnering can become successful by using pertinent management skills and developing a favourable context. It is essential to create an appropriate environment in which inter-organisational relationships can flourish. Management skills are vital for effective control of the relationships. They form the basis for initiating and facilitating the partnering process. Similarly some partnering characteristics can affect the partnering relationships. In consequence, it is important to identify these critical characteristics which form the favourable context conducive to partnering success.

Breakdowns in communication and disruptive conflicts have always been a problem in construction and as a result it has become very adversarial in nature. Partnering requires timely communication of information and it encourages open, direct lines of communication among project participants (Hellard, 1996). Effective communication skills can help organisations to facilitate the exchange of ideas and visions, which can result in fewer misunderstandings and stimulate mutual trust. Similarly, effective coordination can result in achievement of stability in an uncertain environment by the

creation of additional contact points between parties to share project information (Cheng *et al.*, 2000). The other critical management skill is a 'productive conflict resolution' which can be achieved by joint problem solving in order to seek alternatives for problematic issues. According to Cheng *et al.* (2000) conflict resolution techniques such as coercion and confrontation are counterproductive and fail to reach a win-win situation. Furthermore, regular monitoring and early implementation of the partnering process are essential to ensure the success of partnering (Chan *et al.*, 2004).

Similarly, some of the critical characteristics form the favourable context conducive to partnering by establishing interdependence and self-willingness to work for the long-lasting cohesive relationship. Most of these contextual characteristics are soft critical success factors such as top management support, long term commitment, mutual trust, willingness to share resources and commitment to a win-win attitude (Cheng *et al.*, 2000; Li *et al.*, 2001; Chan *et al.*, 2004). Support from top management is always a prerequisite to initiate and lead a successful partnering arrangement. While long-term commitment is expected from involved parties to integrate continuously to weather unanticipated problems, mutual trust is critical to open the boundaries of the relationship as it can relieve stress and enhance adaptability, information exchange and joint problem solving (Cheng *et al.*, 2000). Commitment to a win-win attitude represents the open airing of problems among parties and encourages risk sharing, rewards and willingness to exchange ideas (Chan *et al.*, 2004). This leads towards sharing of resources (Bing *et al.*, 2005) which can be used to strengthen the competitiveness and construction capability of a partnering relationship.

Cheung *et al.* (2000) claim that there is a lack of attention to these critical factors and they need to be addressed if partnering is to be successfully implemented as a strategy for performance improvement.

2.2.7 Partnering benefits, challenges and drivers

The above literature synthesis has shown the factors affecting the success of construction partnering. While partnering can offer potential benefits, it requires careful organisation of critical success factors. Concurrently, failure to address the identified challenges may hamper the performance of a project. Therefore it is important to identify the manner in

which the partnering challenges can be addressed by the appropriate use of critical success factors (Figure 2-3). Also the synthesis on partnering challenges and problematic issues shows the significance of cultural and behavioural challenges inhibiting the adoption of partnering arrangements.

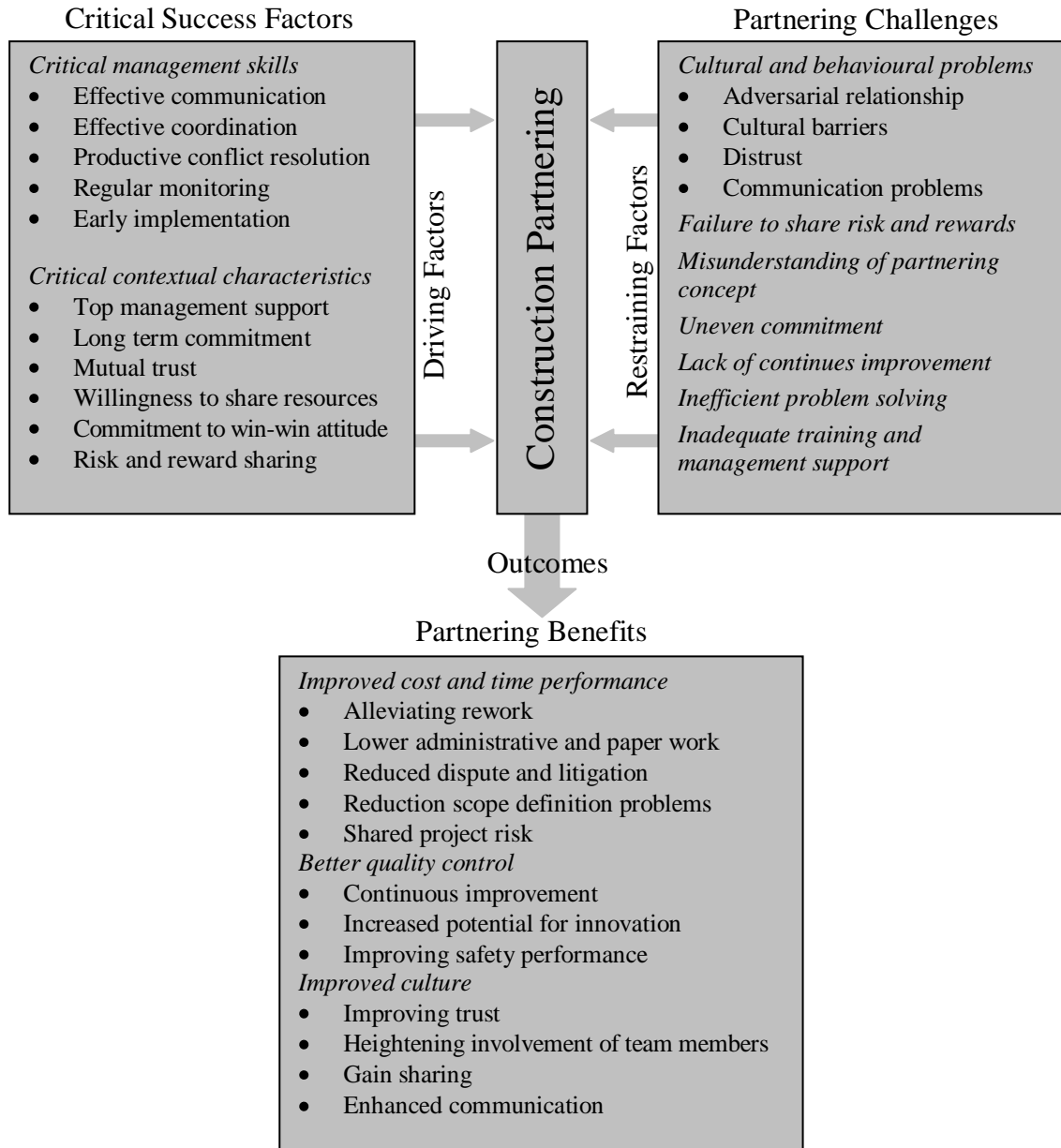


Figure 2-3: Overview of partnering benefits, challenges and drivers

Common to all partnering relationships is the formulation of mutual objectives, trust and an understanding of each other's commitments. However, it is less than clear about the way in which these essential cultural and behavioural characteristics are encouraged in construction partnering projects (Bresnen and Marshall, 2000d; Ankrah *et al.*, 2009). It is

essential to bring about cultural change, encouraging project participants to transgress the conflicting interests and to build a shared culture. The following section explores the underlying principles of project and organisational culture to establish the driver of cultural change.

2.3 Cultural change in construction partnering projects

2.3.1 Understanding culture

According to Schein (2004), culture as a concept is an abstraction, yet the forces that are created in social and organisational situations that derive from culture are powerful to make or break their social and organisational routines. The most intriguing aspect of this phenomenon is that it is powerful on its own, below the surface but invisible with a considerable degree of unconsciousness. To complicate matters further, culture within individuals constantly evolves (Meyerson and Martin, 1987) as they join and create new groups that eventually create new cultures (Schein, 2004). Understanding the dynamics of culture will not only explain why various groups of people or organisations are so different, but also why it is hard to change them.

2.3.1.1 Culture: In search of a definition

The concept of culture has given rise to considerable academic debate and there are various approaches to define and study culture (Smircich, 1983; Hofstede, 1991; Askanasy *et al.*, 2000; Martin, 2002; Schein, 2004). Most of these definitions are either concerned about how people think about things around or ‘behaviour’ of the way people do things. Handy (1993: p.191) identified four main types of culture, but went on admitting that “*a culture cannot be precisely defined, for it is something that is perceived, something felt*”. Literature synthesis reveals that most authors agree that culture is a very complex term and difficult to define in words.

The underlying assumption of this study is that culture is a socially constructed reality. Therefore, the definition of what culture is and how cultural change occurs depends on how one perceives culture. Meyerson and Martin (1987) offer three different ways of thinking about and enacting culture and cultural change: integration, differentiation and

ambiguity. Researchers in the 'Integration' school of thought perceive culture as an integrating mechanism that is shared by and/or unique to a given organisation or group. While studies in this paradigm focus on different levels of cultural manifestations they emphasise three central characteristics: consistency across cultural manifestations, consensus among cultural members and a focus on leaders as culture creators (Pettigrew, 1979; Meyerson and Martin, 1987; Schein, 2004). This type of cultural portrayal offers the key to managerial control, worker commitment, and organisational effectiveness by engineering, or at least partially controlling culture (Meyerson and Martin, 1987). In this school of thought cultural change is controlled by top management and shared throughout an organisation/entity.

In contrast to the emphasis on integration, the second form of cultural portrayal is characterised by differentiation and diversity by paying attention to inconsistencies, lack of consensus, and non leader centred sources of cultural content (Meyerson and Martin, 1987). This perspective is formed by influences from inside and outside the organisation compared to a much more closed-system view taken in the earlier school of thought. Here, culture is considered as composed of a collection of values and manifestations, some of which may be contradictory (Smith and Simmons, 1983). Due to this, various sub cultures emerge reflecting functional, national, occupational, ethnic, or project affiliations (Gregory, 1983; Gallivan and Srite, 2005). In this perspective, cultural change is more incremental, rather than revolutionary and more strongly emphasises the changes in the connections between subcultures and the dominant culture.

The third school of thought differs from the others, primarily in its treatment of ambiguity. While other schools discourage ambiguity this paradigm embraces ambiguity. Therefore, complexity and lack of clarity can be legitimated where irreconcilable interpretations are simultaneously entertained. This cultural portrayal would have no shared, integrated set of values (Meyerson and Martin, 1987). From this standpoint, "*culture is as much a dynamic, evolving way of thinking and doing as it is a stable set of thoughts and actions*" (Van Maanen and Barley, 1984: p. 307). Table 2-1 summarises the above discussed perspectives of culture and cultural change.

This research mainly aligns itself with the ‘integration’ perspective of cultural portrayal. This perspective focuses on a leader as the primary source of cultural content and denies ambiguity to form a much clearer interpretations of shared values. This research attempts to address cultural and behavioural challenges to embed and reinforce a collaborative working culture between participants of partnering arrangements. This clear focus on the collaborative culture as promoted by industry sponsored reports and the leadership element attached to this study concur with the cultural portrayals of the ‘integration’ perspective. However, differences between various participants and subcultures should be recognised to address the root causes of adversarialism within the industry. Therefore, elements of the ‘differentiation’ perspective are incorporated within this study by broadening the definition of leadership as discussed in Section 2.4.1 of this chapter.

Table 2-1: Contrasting the approaches to culture and cultural change

	<i>Integration</i>	<i>Differentiation</i>	<i>Ambiguity</i>
<i>Degree of consistency among cultural manifestations</i>	Consistency	Inconsistency and Consistency	Lack of clarity and irreconcilable inconsistencies
<i>Degree of consensus among members of culture</i>	Organisation wide	Within; but not between subcultures	Issue-specific consensus and confusion among individuals
<i>Reaction to ambiguity</i>	Denial	Channelling	Acceptance
<i>Nature of cultural change process</i>	Revolutionary	Incremental	Continual
<i>Source of cultural change</i>	Leader centred	External and internal catalysts	Individual adjustments and interpretations

Hofstede provides a general definition of culture as “*transmitted and created content and patterns of values, ideas, and other symbolic-meaningful systems as factors in the shaping of human behaviour and the artefacts produced through behaviour*” (2001: p. 583). Allaire and Firsirotu (1984: p. 216) see culture as a “*system of symbols shaped by ambient society and the organisation’s history, leadership and contingencies, differentially shared, used and modified by actors in the course of acting and making sense out of organisational events*”. Schein (1985: p. 6), in his seminal work

‘organisational culture and leadership’ describe culture “*as the basic assumptions and beliefs that are shared by member of an organisation, that operate unconsciously and define in a basic taken for granted fashion an organisation’s view of itself and its environment*”. Many of these definitions share various common aspects of culture. Culture is the glue that holds the system together as a source of identity and distinctive competence (Bolman and Deal, 1991; Masood *et al.*, 2006). Most importantly many researchers state that culture is learnt, not biologically inherited and involves arbitrarily assigned symbolic meanings (Williams *et al.*, 1993; Barthorpe *et al.*, 2000; Senior, 2002) Therefore, expectations and strategy are rooted in ‘collective experience’ and become reflected in organisational routines that accumulate over time (Frankema, 2001; Johnson *et al.*, 2005). Since the definition by Schein (1985) is centred on cultural change and leadership, his view of culture is appropriate for this research. To simplify and construct a working definition of culture for this research, the author takes the view that any change in culture needs consideration and focus on basic assumptions and beliefs that are shared by members of an organisation, that operate unconsciously. Here, culture is considered as the commonly held beliefs, attitudes, values and characteristic patterns of behaviour that bind people and systems.

However, the aspect of unconsciousness in Schein’s definition can result in difficulty to measure, change or subject it to empirical investigations. The unconscious and invisible entity offer little opportunity for reality testing (Williams *et al.*, 1993). In case of a cultural change it is important to change these unconscious and basic assumptions so that they do not reverse back to the original ‘taken for granted assumptions’. Therefore, as Schein (2004) argues, the most central issue is how to get to the deeper levels of a culture, assess the functionality of the assumptions made at that level and deal with the anxiety that is unleashed when those assumptions are changed. Culture consists of several elements/levels of which some are implicit and others are explicit (Groseschl and Doherty, 2000).

2.3.1.2 The levels of culture

Schein (2004) shows that culture can be analysed at several different levels, with the term level meaning the degree to which the cultural phenomenon is visible to the observer (Figure 2-4). These levels range from the very tangible overt manifestations that one can

see and feel to the deeply embedded, unconscious, basic assumptions. In between these layers are various espoused beliefs, attitudes, values, norms and rules of behaviour that members of the culture use as a way of depicting the culture to themselves and others. Culture can be seen as consisting of three major levels; observables, attitudes and values and basic underlying/shared assumptions (Barley, 1983; Schein, 2004).

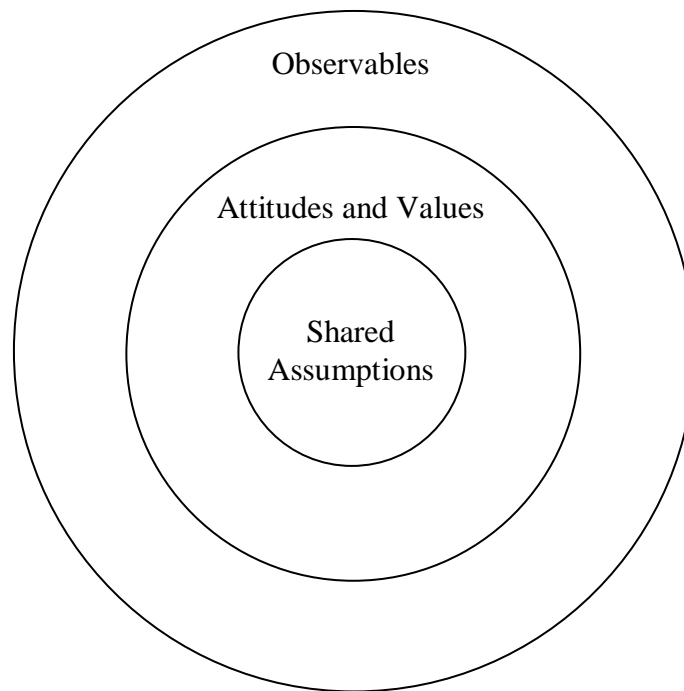


Figure 2-4: Levels of culture (adapted from Schein, 2004)

Observables represent the visible aspects of the group/organisation. The characteristic patterns of behaviour, the rites, rituals and symbols can be seen as observables. Attitudes and values symbolise strategies, goals and philosophies. They can be described as “*a learned predisposition to respond in a consistently favourable or unfavourable manner to a given object or data*” (Fishbein and Ajzen, 1975: p.6). While there is slight difference between attitude and value, both of them are formed and influenced by shared assumptions (Williams *et al.*, 1993). It is important to recognise that observables are difficult to decipher while attitudes and values may only reflect rationalisation or aspirations (Schein, 2004). However, to get a deeper level of understanding or to predict the future behaviour correctly, one must attempt to get at its shared basic assumptions and taken for granted perceptions.

As Figure 2-5 illustrates, attitudes, values and observables are dependent upon shared assumptions. While observables are created from attitudes, values and shared assumptions are formed by the internal and external environment and the factors which change those (Williams *et al.*, 1993). External changes are inevitable for today’s organisations while it is important for the leaders and change agents to be aware of their potential effects on planned change (Buch and Rivers, 2001). Leaders create mechanisms for cultural development and the reinforcement of norms and behaviours expressed within the boundaries of the culture. The characteristics and qualities of an organisation’s culture are taught by its leadership and eventually adopted by its followers (Bass and Avolio, 1993).

According to Johnson *et al.* (2005), the external and internal environment can be seen as ‘cultural frames’ which influence the assumptions and behaviours of individuals. He illustrates national/regional, organisational field, organisational and divisional as the cultural frames which can form subcultures within an organisation. Influence of the ‘organisational field’ is better understood as the cultural influence of ‘work based’ groupings such as an industry or profession. An organisational field is a community of organisations that partake of a common meaning system and whose participants interact more frequently with one other than with those outside the field (Johnson *et al.*, 2005). Therefore it is important to understand both the organisations comprising the field and the assumptions they adhere to.

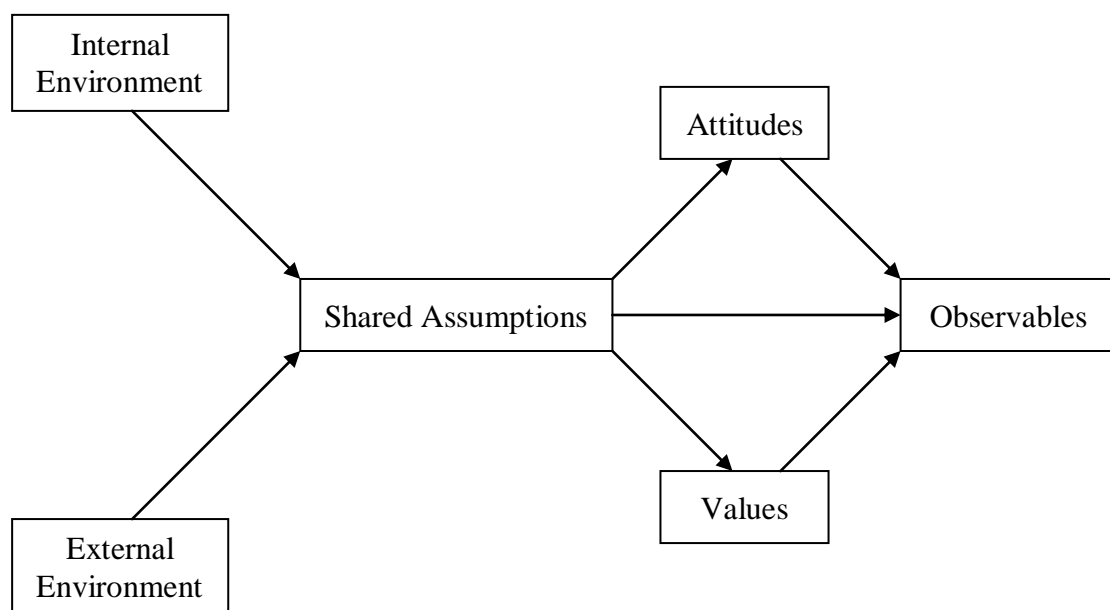


Figure 2-5: Relationship between cultural elements (source: Williams *et al.*, 1993)

Organisations within a field such as construction tend to cohere around common norms and values. Several industry commissioned reports share this view, where problems such as low and unreliable demand and profitability, lack of research and development, inadequate investment in training, its current approach to the usage of tender price evaluations, an adversarial culture and fragmented industry structure, are widely recognised (Latham, 1994; Egan, 1998; NAO, 2001; Santos and Powell, 2001; Fairclough, 2002; Wolstenholme, 2009). Successive independent reviews of construction have emphasised the need to improve the culture, attitude and working practices of the industry. As argued above, it is very important to understand the construction organisations and their underlying assumptions to make these attitudinal and cultural improvements in the construction industry. However, trying to understand culture is not straight forward. The day-to-day behaviours not only give clues about the ‘shared assumptions’ but are also likely to reinforce these assumptions. The cultural web is considered as a useful tool to attain a rich source of information about an organisation’s culture (Hill and McNulty, 1998).

2.3.2 The cultural web

The concept of the ‘cultural web’ is a representation of the shared assumptions, or paradigms of an organisation and the behavioural manifestations of organisational culture (Johnson *et al.*, 2005). It arose from the belief that understanding and characterising both the culture and subcultures within an organisation could help to predict how easy or difficult it would be to adopt new strategies (McGrady, 2005). The cultural web is primarily a tool for diagnosing change related issues and problem in terms of culture (Hughes, 2007). This is the central theme of the undertaken research, that explores the challenges and issues in adopting a collaborative culture within construction partnering arrangements. Therefore, the cultural web is an appropriate tool/mechanism to analyse and understand the issues and challenges in construction partnering. Various researchers have used the cultural web to understand culture, culture and behaviour related issues and diagnose cultural change strategies (Hendry and Hope, 1994; Heracleous and Langham, 1996; Handscombe, 2003; Price and Chahal, 2006; Alvesson and Sveningsson, 2008; Balogun *et al.*, 2008; Losekoot *et al.*, 2008).

Identifying the key dimensions is crucial to defining and understanding organisational culture and related issues (Price and Chahal, 2006). Similar to Schein's levels of culture (2004), the cultural web concept defines organisational culture as layers of attitudes, values and shared assumptions. Paradigm/shared assumptions lie within a cultural web which bonds it to the action of organisational life (Johnson, 1992). Figure 2-6 shows the elements of the cultural web which bonds the taken-for-granted assumptions and organisational life.

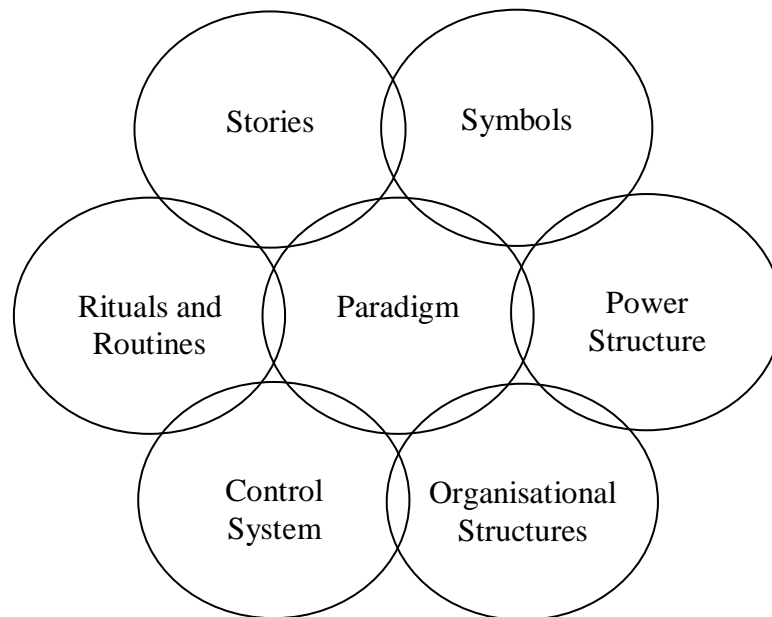


Figure 2-6: The cultural web (adapted from Johnson *et al.*, 2005)

The elements of cultural web (Johnson *et al.*, 2005) are as follows:

- **Routines** are seen in the behaviours that members of the organisation use with each other and those outside the organisation. They make up 'the way we do things around here'. Competitive pricing can be seen in many construction organisations as one the major routines. Such kinds of well established routines result in adversarial cultural behaviours and they are extremely difficult to change (Johnson *et al.*, 2005).
- **Rituals** are special events through which the organisation emphasises what is important and reinforces 'the way we do things around here'. New collaborative rituals can be introduced in the construction industry or old rituals done away with to reinforce change towards collaborative practices. Induction and training programmes, award ceremonies, promotions, and project teams are some of these rituals which can be used in cultural transformation.

- **Stories** told by members of the organisation to each other, to outsiders and to new recruits, embed the present in its organisational history and highlight important events and personalities. They typically have to do with successes, disasters, heroes, villains. Stories may also be managed by the usage of corporate newsletters and newspapers. They symbolise what is important in an organisation and help to shape its culture.
- **Symbols** such as logos, offices, clothes and titles or the type of language and terminology commonly used become a shorthand representation of the nature of the organisation. It is argued that changing symbols can help reshape beliefs and expectations because meaning becomes apparent in the day-to-day experience people have of organisations (Johnson *et al.*, 2005). Changes in physical aspects of work environment, changes in the behaviours and language used by strategic leaders are considered as powerful symbols of transformation.
- **Power structures** are the most powerful groupings within the organisation and are usually associated with this set of core assumptions and beliefs. Transforming the behaviours and rituals of powerful groups can reduce the resistance towards the desirability of change.
- **Control systems**, measurements, recognition and reward systems emphasise what it is important to measure in the organisation and to focus attention and activity upon. For example, most of the incentive schemes in construction partnering include just the client and main contractor (Bresnen and Marshall, 2000c). It is suggested to expand the project incentive systems to the whole supply chain, based on incentives upon project performance.
- **Organisational structure** is likely to reflect power structures and to describe key relationships emphasising what is important in the organisation. Partnering structures are aimed at focusing on the parties that were engaged in adversarial relationships and by re-organising their interface, fundamentally improve their ability to resolve inter-organisational conflicts (Li *et al.*, 2001). Organisational boundaries are assumed to merge in the later stages enhancing trust and inter-organisational exchange. However, this chosen structure should also be aligned with matching processes and relationships.
- **The paradigm** (philosophical framework) of the organisation encapsulates and reinforces the behaviours observed in the other elements of the cultural web. It

represents the unquestioned assumptions that exist within an organisation. A comparison between the current organisational taken-for-granted assumptions and industry requirements would show the essential elements of cultural transformation.

A detailed map produced by the cultural web would expose a rich source of information about an organisational culture (Handscombe, 2003; Johnson *et al.*, 2005; Alvesson and Sveningsson, 2008; Balogun *et al.*, 2008). The cultural web is closely linked to strategic management and strategic direction which interconnects with leadership aspects. Hence, it is an appropriate tool to look at cultural challenges and required changes from a strategic perspective in a structured manner. This research focuses on producing an understanding of current shared assumptions and related challenges within construction partnering projects that can be used to identify areas to be modernised and transformed to facilitate behavioural and cultural change in construction partnering projects. Even though a cultural web may only form the first step towards cultural alignment, it would contribute to understand the ways in which a smoother cultural change can be achieved in construction partnering projects. A comparison of cultural webs of ‘parties to partnering contract’ can also reveal the requirements to form cultural alignment between the parties. Loizos (1995) argues that the cultural web not only helps to clarify main and subconscious cultural, structural and procedural characteristics of an organisation but also helps to show which values, beliefs and artefacts need to adapt to a new strategic direction and which ones should be maintained and strengthened. Also, it represents a substantial range of the elements which must be managed if a strategic and cultural change is to be successful.

As discussed in Section 2.3.1.1, leadership is an essential element of cultural change. Several authors perceive leadership as the source of beliefs and values that forms shared assumptions of organisational culture (Meyerson and Martin, 1987; Heracleous and Langham, 1996; Schein, 2004; Price and Chahal, 2006). The next section explores the links between cultural change and leadership.

2.3.3 Cultural change and leadership

Despite the fact that commentators place considerable emphasis upon the importance of changing attitudes, improving interpersonal relationships and transforming organisational cultures, very little of the research has explored the social and psychological aspects

associated with the successful integration of partnering (Bresnen and Marshall, 2000d; Wood and Ellis, 2005). Two imperatives in the management of cultural change are the leadership's ability to think culturally and to conceptualise, via a working model, the change process (Brooks, 1996). According to Schein (2004), leadership is originally the source of the beliefs and values that get a group moving with its internal and external problems. Once the leader's proposals continue to work, they gradually come to be shared assumptions of organisational culture. Furthermore there is evidence that strong organisational cultures are associated with strong and competent leadership (Kotter and Heskett, 1992). A study on 1918 members of a Management Institute revealed that culture is more responsive to leadership dimensions than leadership is to culture (Sarros *et al.*, 2002).

In order to effect change, powerful support is required from an individual or group combining both power and interest. To achieve this, a reconfiguration of power structures may be necessary, especially if transformational change is required. Johnson *et al.* (2005) propose manipulation of organisational resources, relationships with powerful stakeholders and elites and activities with regard to subsystems in the organisation as the mechanisms to build a power base and to achieve commitment to a course of action. Furthermore, it is argued that changing symbols can help reshape beliefs and expectations because meaning becomes apparent in the day-to-day experience people have of organisations (Johnson *et al.*, 2005; McGrady, 2005). Changes in physical aspects of work environment, rituals, organisational structure, control mechanisms, stories and especially changes in the behaviours and language used by strategic leaders themselves are considered as powerful symbols of transformation. However, well established routines can be serious blockages to change. Routines are closely linked to the core values of the paradigm, so changing routines may have the effect of questioning and challenging deep rooted beliefs and assumptions of an organisation. This requires persistence and political acumen.

This seems very complicated in the context of partnering since the cultural alignment requires to be extended to the parties of partnering arrangement. It is certainly not easy to bring about cultural change to adopt a new set of behaviours as a consistent way of working among people. Bresnen and Marshall (2000d) stress the importance of decentralised, flexible structures, where the team is expected to operate with considerable

autonomy and discretion to convert formal partnering arrangements into real differences in behaviour at operational levels. They insist on top management support, commitment and enthusiasm in generating and sustaining changes in collaborative approaches. Furthermore, Deal and Kennedy (1998) encourage managers to convey two-way trust in all matters of change and training as a part of the change process to take on the challenge of change. Cultural change is therefore a sensitive issue and it is very important to lead the whole process all the time. Smith (2003) recognises the crucial role of leadership as the key to successful change. Together with the understanding of the current state of culture, leadership has the most significant role to play in the transformation of attitudes and beliefs.

2.4 Understanding leadership

The dynamic process of creation and management of culture is the essence of leadership. Even though there are various views on whether leadership should lead or manage culture, most of the influential authors agree on the interconnection and interdependency of these concepts. Leadership has been studied in greater detail amongst these, leading to frustrating diffusions of concepts of what leadership is really about. Many of these questions about leadership have been a subject of speculation, but scientific research on leadership did not begin until the twentieth century (Yukl, 2006). The definitions of leadership have evolved based on individual perspectives and the aspects of the phenomenon of most interest to the researchers.

Leadership has long been a topic of interest in complex civilisations. Discussions relating to leadership and leadership effectiveness were found in writings of ancient Greece and Chinese philosophers (Bass, 1990; Mello, 1999). For example, in the book of *The Republic*, Plato distinguished between leaders, with their intellectual capacity and wisdom as ‘men of gold’ and those not intended to lead as ‘men of bronze’ (Halmos and Iliffe, 1999; Avery, 2004). Given such a far-reaching history, it would seem that there should be some clear and consistent definition of leadership. However, there has been no consistent or agreed definition of leadership. According to Bennis and Nanus (1985), leadership is both the most studied and the least understood topic in the social sciences. Each individual

researcher seems to have his or her own unique definition of leadership (Mello, 1999). In addition, definitions remain elusive in light of the multidimensional aspects of leadership.

According to Yukl (2006), leadership has been defined in terms of individual personality traits, leader behaviours, responses to leader behaviours, interpersonal exchange relationships, interaction patterns, role relationships, follower perceptions, task goals, organisational culture, and nature of work processes. Also, there is sharp disagreement as to how leadership relates to management, where the two overlap and whether the two are distinct processes/phenomena. One interpretation conceptualises management as coping with complexity while leadership, by contrast, involves coping with change (Kotter, 1998). Another researcher differentiates between management as more of an active process, and leadership as an interactive process (Mello, 1999). These various paradigms of leadership are discussed below to construct a basic understanding of leadership theory.

2.4.1 Evolution of leadership

Understanding leadership is challenging because of a lack of agreement to the tendency for researchers to focus on narrow aspects of the field. Perhaps ‘the’ definition for leadership is illusory because of a broad range of contexts that the concept can cover. The dynamic nature of the business world, increasing diversity, reliance on communication systems, ever changing social perceptions of values, and globalisation are some of the reasons for complicating the study of leadership and generating many ideas. Development on the philosophical arena has also shaped the way people perceive leadership from a concrete reality towards a context specific multidimensional paradigm. It is very important to explore the evolution of leadership to understand the trend and the metaphysical concept behind this cognitive ability.

2.4.1.1 Trait and behavioural approach

The initial concepts dealt with the attributes of great leaders. According to Bernard, leadership was explained by the internal qualities with which a person is born (1926 cited Horner, 1997). The thought was that if the traits that differentiated leaders from followers could be identified, successful leaders could be quickly assessed and put into positions of leadership. This approach involved studying traits or characteristics of leaders to explain

their success as leaders. The various types of traits examined by various researchers included physical characteristics, personality characteristics, social characteristics, and personal abilities and skills (House and Podaskoff, 1994). Trait and behavioural approach was based on the idea that leaders were born, not made, and the key to success was simply in identifying those people who were born to be great leaders. Though much research was done to identify the traits, no clear answer was found with regard to what traits consistently were associated with great leadership (Horner, 1997). One flaw with this line of thought was in ignoring the situational and environmental factors that play a role in a leader's level of effectiveness.

These criticisms of trait theories moved studies of leadership to a focus on behaviour, with the dominant approach toward leadership becoming an examination of observable behaviours of leaders. This approach focused on how subordinates reacted to a leader's behaviour. These studies looked at leaders in the context of the organisation, identifying the behaviours they exhibit that increases the effectiveness of the company. The well-known and documented Michigan and Ohio State leadership studies took this approach. Two different dimensions of leader behaviour were identified by these studies: consideration (the concern for people) and initiating structure (the concern for productivity) (Cole, 1996). The impact of this work was in part the notion in the research done by Saal and Knight (1988) that leadership was not necessarily an inborn trait, but instead, effective leadership methods could be taught to employees. These research studies were making progress in identifying what behaviours differentiated leaders from followers so that the behaviours could be taught. However, there were some consistencies within certain types of situations which suggested that the situation or context of the leadership process might impact a leader's effectiveness. Also, continuing this work, Blake, Shepard, and Mouton (Cole, 1996) developed a two-factor model of leadership behaviour similar to that found at Ohio State and Michigan. They later added a third variable, that of flexibility. According to these studies, managers exhibit behaviours that fall into the two primary categories (task or people). Depending on which category was shown most frequently, a leader could be placed along each of the two continua.

2.4.1.2 Contingency approach

These outcomes of the behavioural approaches towards leadership gave rise to situational analyses of leadership. These approaches explored the best way to lead which dealt with the interaction between the leader's traits, the leader's behaviours, and the situation in which the leader exists. This concept opened the door for the possibility that leadership could be different in every situation (Saal and Knight, 1988; Horner, 1997). One such theory by Fiedler considered two variables in defining leader effectiveness: leadership style and the degree to which the leader's situation is favourable for influence (Fiedler, 1967). Fiedler argued that a leadership style was innate; that leaders were either task or relations-oriented by nature and three situational factors (leader-member relations, task structure and leader position power) determined whether task or relations-oriented leadership was more appropriate. This gave rise to the state that the change in the situational factors would require a replacement of the leader.

This assumption was discarded in the path-goal theory of leadership by House (House, 1971) which argued that effective leaders shift from one leadership style to another as situations warrant. House focused on the relationship between leader behaviour and situational variables. This theory dealt with an analysis of the people who are led by leaders. The importance of the followers in leadership emerged (House and Mitchell, 1974), and leadership was seen as an interaction between the goals of the followers and the leader. This theory suggested that leaders are primarily responsible for helping followers develop behaviours that will enable them to reach their goals or desired outcomes. In addition to the models developed by Fielder and House, several other contingency models have been developed that examine leadership effectiveness relative to the readiness level of team members to perform tasks (Horner, 1997) and characteristics of decision problem attributes (Vroom and Yago, 1988). Regardless of this, none of these models has been able to advance a testable universal theory of leadership (Mello, 1999).

2.4.1.3 Contemporary approach

As leadership research has grown and expanded, an even broader look at leadership has emerged: a focus on organisational culture. According to Schein (2004) for leaders to be effective, issues related to the culture must be clearly identified. Leaders must be able to

adapt to change, depending on the culture, as the environment shifts and develops. In one study it was found that organisations that have tried to resist change in the external environment have experienced more difficulties than organisations that have responded positively to change (Baron, 1995). However, the application of these ideas is difficult, in part due to the organisational specificity of culture and the difficulty in defining culture (Horner, 1997). These studies suggest that leaders need to work within the culture to be most successful. On the other hand, several authors argue that culture is more responsive to leadership dimensions than leadership is to culture (refer to Section 2.3.3).

Furthermore, most of the leadership research and theories depend heavily on the study of motivation, suggesting that leadership is less a specific set of behaviours than it is creating an environment in which people are motivated to produce and move in the direction of the leader (Horner, 1997). By creating the right environment, one in which people want to be involved and feel committed to their work, leaders are able to influence and direct the activities of others. Herzberg (1964 cited Cole, 1996) differentiated between elements in the work place that led to employee satisfaction and elements that led to employee dissatisfaction. This theory ties to leadership, because leaders may be interested in reducing dissatisfaction and increasing satisfaction to develop an environment more favourable to employee satisfaction. Maslow (1943 cited Weiss, 2001) proposed a need hierarchy in which certain needs are more basic than others and people are motivated to satisfy them. Alderfer (1969) built on this work, suggesting that there may be only three needs (existence needs, relatedness needs, and growth needs) in a hierarchy of concreteness and people could move up and down the hierarchy motivated by multiple needs at any one time. Murray's (1938 cited Yukl, 2006) manifest needs theory suggests that people experience a wide variety of needs and everyone may not experience the same needs. The appropriate environmental conditions activate certain needs. Relating these to leadership, work typically satisfies some needs, and the question is whether leaders can develop an environment that helps to meet people's needs.

Leaders are certainly in a position to understand what people value, provide balanced input/output, set performance goals and provide either positive or negative consequences to followers. These motivation theories add to leadership work because of the emphasis on the followers and what causes them to act, instead of focusing on the leaders and their

traits, behaviours, or situations. Therefore, leadership can be viewed as not only the process and activity of the person, who is in a leadership position, but also the environment leader creates and how the leader responds to the surroundings, as well as the particular skills and activities of the people being led (Horner, 1997).

Using motivational theories as support, additional leadership theories have emerged. This is represented by the comparison of transactional versus transformational leadership on the needs of the situation (Bass, 1985; Tatum *et al.*, 2003). This theory maintains the view that transformational leaders are charismatic. They create a vision of the future and inspire their followers to question the status quo and pursue new purpose. In other words, transformational leaders can initiate and cope with change, and they can create something new out of the old. In this way, these leaders personally evolve while also helping their followers and organisations to evolve. Transactional leaders, by contrast, represent efficient managers who can focus on the task at hand, communicate clear expectations to their subordinates, solve immediate problems, and reward performance. This view stems from more traditional views of workers and organisations, and it involves the position power of the leader to use followers for task completion. Recent research suggests that there may be a third type of leader: the laissez-faire leader (Bass and Bass, 2009). The laissez-faire leader tends to lead by staying out of the way. They let people either manage them or, be managed 'by the book'. The laissez-faire leader adopts a style of leadership that is sometimes characterised as passive-avoidant, management by exception, or administrative (Avolio *et al.*, 1999; Tatum *et al.*, 2003).

Gardner (1990) believed leadership as moving toward and achieving a group goal, not necessarily because of the work of one skilled individual but because of the work of multiple members of the group. Manz and Sims (1991) suggested that 'the most appropriate leader is one who can lead others to lead themselves'. This view gave rise to the thinking of existence of leadership within each individual, not only confined to the limits of formally appointed leaders. Another theory looked at leadership as a process in which leaders were not seen as individuals in charge of followers, but as members of a community of practice (Drath and Palus, 1994). With this view, leadership is not so much defined as the characteristics of a leader, but instead leadership is the process of coordinating efforts and moving together as a group. Similarly, Kellerman and Webster

(2001: p. 487) define leadership as “a dynamic process in which the leader(s) and followers interact in such a way as to generate change”. Vroom and Jago (2007: p. 18) support this view and perceive leadership as “a process of motivating people to work together collaboratively to accomplish great things”. After this conceptualisation of leadership as a process in which everyone actively participates, researchers have been acknowledging the highly complex, interdependent nature of leadership (Horner, 1997).

From a process perception, leadership is viewed as a process in which leaders are not seen as individuals in charge of followers, but as members of a community of practice (Drath and Palus, 1994; Horner, 1997). Facilitating, coaching and empowering become essential in this perception. According to Horner (1997), with collaboration, openness, and the creation of shared meaning, leaders elicit the commitment of others and guide the work process, allowing members to expand their skills and contributions to the organisation more broadly. It is evident that leadership concepts have moved from basic management theory and motivation, to process viewed and group targeted setup in the present dynamic environment. Table 2-2 summarises the continuum of leadership paradigms reflecting different aspects of leadership.

Table 2-2: Continuum of leadership paradigms (adopted from Avery, 2004)

<i>Leadership Characteristic</i>	<i>Classical</i>	<i>Traditional</i>	<i>Visionary</i>	<i>Organic</i>
<i>Major era</i>	Antiquity – 1970s	1970s – mid 1980s	Mid 1980s - 2000	Beyond 2000
<i>Basis of leadership</i>	Leader dominance through respect and/or power to command and control.	Interpersonal influence over & consideration of followers. Creating appropriate environments.	Emotion – leader inspires followers	Mutual sense-making within the group. Leaders may emerge rather than be formally appointed.
<i>Source of follower commitment</i>	Fear or respect of leader. Obtaining rewards or avoiding punishment.	Negotiated rewards, agreements and expectations.	Sharing the vision; leader charisma may be involved; individualised consideration.	Buy in to the group’s shared values and processes; self determination.
<i>Vision</i>	Leader’s vision is unnecessary for follower compliance.	Vision is not necessary, and may ever be articulated.	Vision is central. Followers may contribute to leader’s vision	Vision emerges from the group; vision is a strong cultural element.

Despite the numerous attempts by researchers to describe and explain leadership, there is no consistent definition of leadership prevalent within the literature. However, looking at various definitions especially within the contemporary approach, some of the key common characteristics of leadership can be formed. They are;

- It is mostly viewed as a process
- It influences people/followers
- It attempts to make people/followers to strive towards the achievement of organisational goals.

From this, a working definition could be formed as “*a process of influencing people to willingly strive towards the achievement of organisational goals*”. This has laid the groundwork for examining leadership as a process, taking the emphasis away from an individual. It is evident that leadership concepts have moved from basic management theory and motivation, to process viewed and group targeted setup in the present dynamic management environments.

2.4.2 Leadership studies in construction

Although many studies have been undertaken in the area of leadership, they have generally tended to focus upon manufacturing industries. Few published works exist that are directly concerned with the construction industry. Langford *et al.* (1995) stated that ‘a lack of understanding of knowledge of the industry on the part of social scientists and a lack of understanding of social science by those in the industry has been the cause of this dearth’. Even now the number of leadership related studies in construction is lacking compared to the significance it has in construction. A review of construction management literature reveals that studies of leadership have focused mainly on finding the most appropriate or effective leadership style/s (Chan and Chan, 2005; Ozorovskaja *et al.*, 2007) and appropriate behaviours of project managers (Dulaimi and Langford, 1999). Style related studies categorise leadership styles into two major classes: transactional and transformational. Transactional leadership is defined as an exchange of rewards with subordinates for services rendered (Bass *et al.*, 1996; Giritli and Oraz, 2004). Transformational leadership is considered as the process of influencing, empowering and

raising subordinates from low level to a high level of needs in accordance with Maslow's hierarchy of needs.

Research findings on building professionals from various countries exhibited significant correlation with leadership effectiveness, extra effort by employees, and employee satisfaction and greater use of transformational leadership than transactional leadership (Chan and Chan, 2005). Among various factors of transformational leadership inspirational motivation and idealised attributes (charisma) emerge as prominent behaviours used by building professionals. From a transactional leadership perspective, contingent rewards show a higher preference among professionals. This further supports the view that transformational leadership could augment transactional leadership in producing greater amounts of performance and satisfaction. Contrary to this, Fellows *et al.* (2003) argues the differences between consultants and contractors in leadership styles. Consultants are inclined towards a directive style while contractors choose a participative style. This indicates the possibility of changes in leadership styles with the function of the professionals. Project leaders tend to use a supportive style in feasibility and pre-contract stages of works and a directive style as construction progresses (Fraser, 2000). Further in settling disputes, they may need to be creative and conciliatory (Hopper, 1990; Giritli and Oraz, 2004). That shows the influence of situational factors in using leadership styles within construction projects.

Naum (2001) states that a participative style of leadership within a bureaucratic organisation is expected to be more appropriate than a directive style. He highlights the influence of project circumstances, especially the project duration and the intensity of work. Similarly, the environment in which leadership is exercised is also influential in shaping the leadership style of people who occupy managerial positions in construction settings (Giritli and Oraz, 2004). Thus, in construction, leaders may have to switch from one style of leadership to another, or combine elements of different styles, until the right balance between concerns for tasks and concern for people is reached. For this reason, individuals involved in the management process of construction should be able to enact a range of leadership behaviours.

Also, the role of individuals has great influence in the technological innovation process in the construction industry (Nam and Tatum, 1997). Leadership in innovative construction projects is often seen as an important management function, based on human capabilities such as: entrepreneurship; championship; and, strategic vision (Bossink, 2004). The construction researchers mainly consider the 'leadership role model' as the categorisation of innovation leadership. Nam and Tatum (1997), identified three different types of champions, 'the technical champion'; 'the business champion', 'the executive champion'. They found technological competence as an utmost prerequisite for effective leadership of construction innovation, regardless of the size of the firm. In contrast, Bossink, (2004) found four basic innovation leadership styles; charismatic, instrumental, strategic and interactive innovation. These styles and characteristics strongly relate to process and product innovations in construction projects. Bossink, (2004) concluded that a manager's consistent performance of a leadership style stimulates the project's innovativeness and the success of the project heavily depends on injections of information, knowledge and competence in the project.

Most of these studies focus on individuals such as project managers, their style and capacity to manage and lead construction projects and their behaviour. In recent years, with the influence of contemporary leadership theories, researchers have begun to focus on leadership as a process studying its interdependencies with other soft management issues. Some research works have been published on leadership development (Toor and Ofori, 2008b; Skipper and Bell, 2011), emotional intelligence (Butler and Chinowsky, 2006), leadership in multi-cultural projects (Ozorovskaja *et al.*, 2007; Ofori and Toor, 2009), emerging managerial competencies (Debrah and Ofori, 2005) and leadership succession (Skipper and Bell, 2008). In their study, Toor and Ofori (2008a) argue that leadership research and development should be given greater attention in the construction industry because of the nature of challenges currently faced by construction organisations.

However the leadership research relating to projects, and especially partnering projects, are seldom seen. The above literature synthesis indicates the importance of leadership related studies in construction and in partnering to change to a collaborative culture. The discussion in Section 2.4.3 shows why leadership practices are more important to study than determining the suitable leadership style in construction partnering projects.

2.4.3 Importance of leadership practices in construction partnering projects

According to Bass (1999), there is substantial empirical evidence to support the claims that leaders can exhibit a full range of transactional and transformational behaviours. Even though partnering requires transformational leadership behaviour to support the cultural adoption and change, reactive transactional leadership behaviours are essential to lead people in the daily maintenance of the project. This combination of transformational and transactional, fire-lighter leadership style (Barber and Warn, 2005) is necessary to a project to maintain commitment to a shared outcome and to achieve demanding objectives. However, management by exception and passive avoidant, fire-fighter style leadership may not be appropriate to lead a partnering project. The fire-lighter leader is postulated to have experience in initiating structure, providing emotional consideration and competency on transformational behaviours, whereas the fire-fighter focuses on tackling problems as they arise (Barber and Warn, 2005).

Another concerning factor in the selection of leadership styles is the stages of team development process in construction partnering. As the participants integrate into a team, the development would move from forming, storming to norming and then to performing (Tuckman and Jensen, 1977). As per goal theory of leadership, leaders are expected to shift from one leadership style to another as situations warrant. Therefore, as the project moves along the stages, partnering arrangements may prefer an evolution of styles, beginning with a directive style of leadership to ‘participative’, ‘supportive’ and then ‘achievement oriented leadership styles’. However, with the existing requirement for various stimuli for individual project members at different stages of team development, this process becomes more complicated especially to study various leadership styles.

Styles of leadership emerged from behavioural studies as analysis of the ways in which leaders execute the functions. Partnering projects, with their primary concern over the change of behaviours of project participants, require an initiation from a follower centred, ‘concern for people’ leadership style. This can be further analysed with ‘Stimulus–Organism–Response’ cycle, a fundamental concept in the study of behaviour (Naylor *et al.*, 1980; Liu *et al.*, 2003) that deals with the way in which the individual perceives some subset of the enormous variety of stimuli available in the individual’s environment,

processes them and finally produces behaviour. If leadership is concerned with the ability to influence the behaviour of others via various leadership styles and modes of motivation, it can be taken as the stimulus on project members' behaviours as shown in Figure 2-7. Project leader stimulus would generate project leader behaviour and that in turn would act as the stimulus for the behaviour of individual project members. This response might produce the expected performance from the project team. However, the environment is a collective organism composed of a number of people in which the project leader is an entity. Hence, project organisation and the project leader within it are interrelated while both are active entities in their own right. They are connected to each other and influence each other dynamically (Liu *et al.*, 2003).

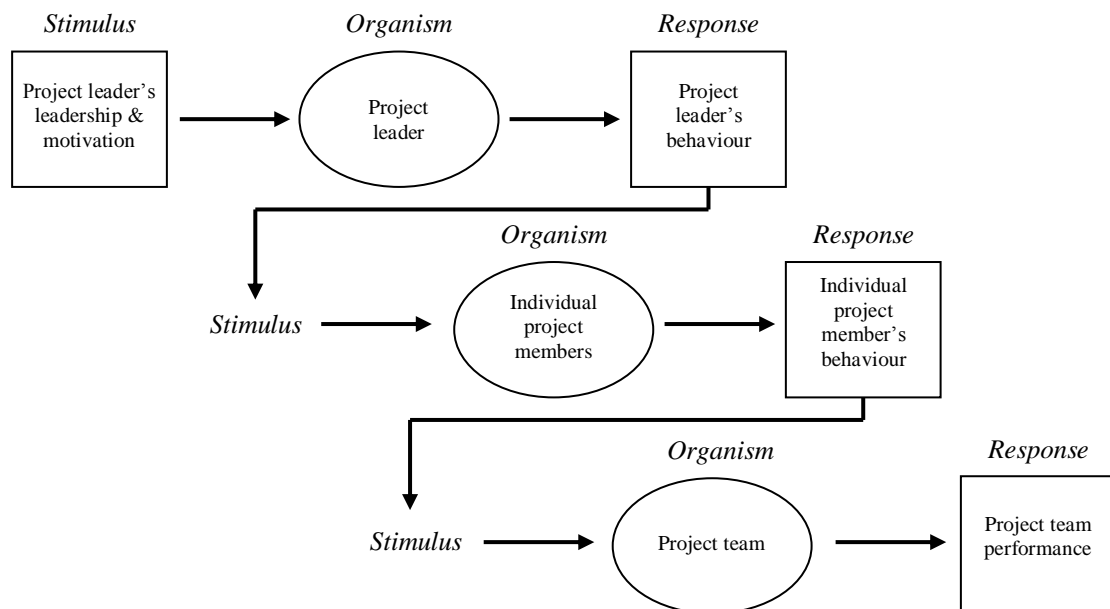


Figure 2-7: From leadership to performance

Construction partnering projects require an integrated, collaborative project team performance. A partnering arrangement consists of various levels of stakeholders ranging from the client, contractor and subcontractor to various material and labour suppliers. This fragmented nature of an individual team would need various behaviours from the project leader as the stimulus for the appropriate response from the individual project members. Ultimately, the project leader is expected to take different leadership styles and modes of motivation to demonstrate a range of behaviours (Bass, 1985). Thus, determining this leadership style/s would be very difficult in this complex situation. In this regard, a focus on leadership practices rather than leadership styles would yield better understanding of

appropriate leadership to address cultural and behavioural challenges in construction partnering projects.

2.5 Development of theoretical framework

Various researchers point out challenges and critical success factors in construction partnering projects (refer to Section 2.2.7). Literature synthesis indicates the importance of addressing cultural and behavioural challenges to achieve successful partnering projects (refer to Section 2.2.5). Cultural transformation cannot be forgotten in the process of addressing these challenges. Leadership is an essential element of cultural change and has the most significant role to play in the transformation of attitudes and beliefs (refer to Section 2.3.3). As discussed in Section 2.4.3, the study of leadership practices would provide a detailed understanding of the ways and means of addressing cultural and behavioural challenges in construction partnering projects. This combination of process oriented leadership perspective and ‘integration’ centred cultural portrayal provide crucial conceptual underpinnings to understand integrated leadership practices in detail.

Brooks (1996) proposed a three pronged approach to change management: that is a focus on power and politics of acceptance, management of symbolic processes and the management of hard infrastructure. In order to effect change, powerful support may be required from an individual or group combining both power and interest. To achieve this, a reconfiguration of power structures may be necessary, especially if transformational change is required. Similarly, Johnson *et al.* (2005) propose manipulation of organisational resources, relationships with powerful stakeholders and elites and activity with regard to subsystems in the organisation as the mechanisms to build a power base and to achieve commitment to a course of action. Furthermore, it is argued that changing symbols can help to reshape beliefs and expectations because meaning becomes apparent in the day-to-day experience people have of organisations (Brooks, 1996; Johnson *et al.*, 2005). Changes in physical aspects of work environment, rituals, organisational structure, control mechanisms, stories and especially changes in the behaviours and language used by strategic leaders themselves are considered as powerful symbols of transformation (Brooks, 1996; George *et al.*, 1999; Schein, 2004). However, well established routines can be serious blockages to change. Routines are closely linked to the core values of the paradigm, so changing routines may have the effect of questioning and challenging deep

rooted beliefs and assumptions of an organisation. This requires persistence and political acumen.

Schein, a seminal author in the area of leadership and culture, proposed a leadership behaviour model to illustrate various mechanisms for cultural change. According to Schein (2004), as shown in Table 2-3, primary embedding mechanisms and secondary mechanisms are used by leaders to embed their beliefs, values and assumptions. Primary embedding mechanisms allows leadership to communicate the core organisational assumptions by establishing criteria for rewards, resources allocation, promotions and organisational status which result in an organisation's climate. While culture is understood as a collection of fundamental values and belief systems which give meaning to organisations (Denison, 1996; George *et al.*, 1999; Joseph *et al.*, 1999; Schein, 2004), climate consists of elements such as behavioural and attitudinal characteristics (Drexler, 1976; Denison, 1996; Joseph *et al.*, 1999; Ashkanasy *et al.*, 2000). Hence, as noted by several authors, leaders have the ability to change climate using embedding mechanisms and get the group moving to form preferred shared perceptions.

Table 2-3: How leaders embed their beliefs, values and assumptions (Schein, 2004)

Primary embedding mechanisms
What leaders pay attention to, measure, and control on a regular basis
How leaders react to critical incidents and organisational crises
How leaders allocate resources
Deliberate role modelling, teaching, and coaching
How leaders allocate rewards and status
How leaders recruit, select, promote, and excommunicate
Secondary articulation and reinforcement mechanisms
Organisation design and structure
Organisational systems and procedures
Rites and rituals of the organisation
Design of physical space, facades, and buildings
Stories about important events and people
Formal statements of organisational philosophy, creeds, and charters

Once a leader's proposals continue to work, they gradually come to be shared assumptions of organisational culture. Hence, to create shared assumptions, it is important for leaders

to provide continuous embedding mechanisms and reinforcement mechanisms. Secondary reinforcement mechanisms assists leaders to further articulate and reinforce, through organisational design, structure, rites and rituals. These mechanisms guide followers to embrace leaders' values and assumptions, which, in turn, set the working ways of an organisation.

Hence, after considering leadership and cultural change related theories, the following integrated theoretical framework is proposed to capture leadership practices to address cultural and behavioural challenges in construction partnering projects. Schein's embedding and reinforcement mechanisms and Johnson's cultural web related theories particularly influence this theoretical framework.

2.5.1 Theoretical framework

The following theoretical framework is proposed to address cultural and behavioural challenges in construction partnering projects.

Embedding mechanisms: Leaders' primary activities/practices to influence employees' core assumptions. These mechanisms consist of planning, organising, motivating and controlling practices of leaders to achieve cultural change. They are divided into three main categories.

- **Structural and political strategies**
 - Planning and organisational strategies used by leaders
 - Leaders' reaction to critical incidents and organisational crises
 - Power related decision making strategies
- **Routines and controls:**
 - Leaders' day to day management practices and controls
 - Allocation of resources, rewards and status
- **Human resource management**
 - Deliberate role modelling, teaching, and coaching
 - Leadership qualities to encourage cultural change
 - Motivation of human resource
 - Selection and training

Reinforcement mechanisms: Other available means to reinforce leaders' values and assumptions. These mechanisms mainly consider the ways in which leaders can use available systems and designs for his/her purpose to achieve a cultural change. Three main categories are identified under reinforcement mechanisms.

- **Structure, systems and procedures**
 - Project/organisational structure
 - Systems and procedures that employees have to use for routine activities and reporting
- **Rites and rituals**
 - Customary habits
 - Ritualistic behaviours
- **Stories and symbolic articulations**
 - Powerful stories about individuals
 - Symbolic arrangements

This theoretical framework is used to capture leadership practices that address cultural and behavioural challenges in construction partnering projects.

2.6 Summary and link

The main focus of this chapter is to provide underlying concepts and theories to form a better philosophical understanding of the logic, interdependency and metaphysical aspects of interconnected phenomena. Partnering definitions are addressed at the beginning of this chapter to explore the reasons behind the proposal of this concept, in order to address the adversarial culture and fragmented nature of the industry. However, numerous researchers still point out the challenges in partnering projects, especially cultural and behavioural issues. The notion of interdependency and interconnection between organisational culture and leadership means that leadership solutions are necessary for the cultural and behavioural challenges in construction partnering projects. Various discussions indicate that partnering, organisational culture and leadership can be viewed from a process perspective. Leadership elucidations for cultural challenges in partnering projects can be studied from a process perspective. In this regard, a focus on leadership practices rather than leadership styles yields a better understanding.

The initial research problem was formulated from various comments on cultural and behavioural challenges in construction partnering projects. Having established the related literature review and a theoretical framework, the next chapter describes the entire process adopted in carrying out this study, i.e. the research methodology.

CHAPTER 3 RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter presented a detailed literature synthesis related to the selected research topic. This chapter discusses the research methodological design of the study, from the inception of the research to the thesis write up. Accordingly, the process of forming the aim, objectives and research questions of the study is initially explained before detailing the process involved in selection of the relevant research philosophy, research approach and research techniques. This is followed by the discussion on operational aspects of this research based on the principles of the hermeneutic approach. Finally, the reliability and validity issues are discussed towards the end of the chapter.

3.2 Establishment of research problem

According to Gill and Johnson (2002), a systematic approach to generating, selecting and refining ideas is key to a research project. Similarly, Saunders *et al.* (2007) perceive the proper establishment of the research problem as the most difficult yet the most important element of the research. The formation of the research problem of this study was established via the initial impetus of the researcher, literature review and expert opinion.

3.2.1 Initial impetus and literature review

It is important to select a research area that ensures the researcher's heart as well as head is engaged in the research project (Saunders *et al.*, 2007). The researcher's initial views regarding UK construction and its modernisation started from the 'Rethinking Construction' report (Egan, 1998). Some of the principles laid down by Egan were considered radical within the Sri Lankan construction industry, from where the researcher started his career. Therefore, it was initially planned to explore the modernisation aspects of the UK construction industry.

The literature review is considered a strong initiative of sound empirical research, which identifies a research gap and proposes research questions that address the gap (Eisenhardt

and Graebner, 2007). According to Gill and Johnson (2002), all research needs a critical review of literature, particularly to demonstrate awareness of the current state of knowledge on the subject, its limitations and how the proposed research aims to add to what is already known. The literature review is considered as a continuous and interconnected process of searching for literature, reading the source of material and writing the review (Ridley, 2008).

The initial impetus for modernising construction recognised the UK construction industry as one of the pillars of the domestic economy, with its capability to deliver the most difficult and innovative projects, matching that of any other construction industry in the world (Egan, 1998). Literature synthesis showed that there is a deep concern that the industry as a whole is underachieving. Problems such as low and unreliable demand and profitability, lack of research and development, inadequate investment in training, its current approach to the usage of tender price evaluations, and an adversarial culture and fragmented industry structure must all be addressed if the industry is to modernise and to improve performance (Latham, 1994; Egan, 1998; NAO, 2001; Santos and Powell, 2001; Fairclough, 2002; Strategic forum for construction, 2002, 2007; Construction Excellence, 2008; Wolstenholme, 2009). As such, successive independent reviews of construction have emphasised the need to improve the culture, attitude and working practices of the industry.

As a follow up to recent industry commissioned reports, several support divisions and programmes were inaugurated to improve the performance to world-class standards. According to Oakland (2001), excellence can be defined as '*Achieving world-class performance*', thus much research in the construction industry in recent years has been focused on 'achieving construction excellence'. A study on the evolution of business excellence revealed that the principles of 'business excellence models' and 'constructing excellence' shares the common objectives of 'delivering world-class products and services' (Cox and Townsend, 1997; Dainty *et al.*, 2001c; Thurairajah *et al.*, 2005). A comparison of the construction industry concepts with internationally recognised business excellence models was carried out to find resemblance and disparity in the application of excellence concepts. Results indicated the significance of leadership elements amongst excellence concepts (Kanji, 2002; Philippe and Juan, 2003; Thurairajah *et al.*, 2005).

In addition to the excellence concepts in recent industry commissioned reports, it has been found that there is a growing interest in the use of partnering in construction (Bresnen and Marshall, 2000d; Dainty *et al.*, 2001b; Wood and Ellis, 2005). A synthesis of construction partnering literature shows that central to any successful partnering arrangement is the change in cultural and behavioural characteristics towards mutual trust and understanding (see Section 2.2.5 of Chapter 2). Leadership is seen as the source of beliefs and values that forms shared assumptions of organisational culture (Bass and Avolio, 1994; George *et al.*, 1999; Schein, 2004). Hence, it is important to focus on leadership practices to embed and transmit a collaborative culture in construction partnering projects.

Following the further literature review in the areas of construction partnering, culture and leadership, the aim and objectives pertaining to the study were formulated.

3.2.2 Expert opinion

Having arrived at the research need and problem through the literature review, the researcher carried out informal interviews and discussions to collect expert opinion regarding construction partnering, culture and leadership.

Informal interviews were carried out to explore the current status of partnering in the UK construction industry. It was found as discussed in the literature review (see Section 2.2.5 of Chapter 2) that construction partnering requires further improvements to enhance productivity and collaborative working within project environments. Similar ideas were expressed and captured via conference presentations and discussions (Thurairajah *et al.*, 2006a, 2006b, 2006c, 2006d). As such, the research embarked on a study focussed on cultural and behavioural challenges in partnering projects and the means to address these challenges via appropriate leadership practices.

3.2.3 Research problem

As discussed in Chapter 1 and Chapter 2, the aim of the research was to identify and develop a framework of appropriate leadership practices to address the cultural and behavioural challenges in construction partnering projects. The following objectives were formulated to address this aim:

1. Investigate the cultural and behavioural challenges in construction partnering projects
2. Identify the root causes of cultural and behavioural challenges in construction partnering projects
3. Establish 'leadership practice areas' to address cultural and behavioural challenges and its root causes in construction partnering projects
4. Evaluate 'leadership practices' to address cultural and behavioural challenges and its root causes in construction partnering projects
5. Develop a framework of leadership practices to address the root causes of cultural and behavioural challenges in order to embed and reinforce a collaborative culture within construction partnering projects.

Collis and Hussey (2003) suggest the choice of research questions instead of research hypothesis as the appropriate method of defining research propositions in a phenomenological study. The preference for research questions in this study is further justified by being more of an exploratory nature, compared to explanatory studies. The following principal research questions were formed based on the above stated aims and objectives. These research questions provide a better focus for the researcher regarding the aim and objectives of the research.

1. What are the cultural and behavioural challenges in construction partnering projects, as identified in the existing domain of research?
2. What are the general cultural and behavioural challenges in construction partnering projects?
3. What are the root causes of these challenges?
4. How does current leadership tackle these root causes and challenges?
5. What are the leadership practices to addressing these challenges?
6. What are the leadership practice areas that embed and reinforce collaborative culture within construction partnering projects?

These questions need to be answered through an appropriate research methodology that helps achieve the aim and objectives of the study. Accordingly, the following section outlines the research methodology of this study.

3.3 Methodological framework

Research methodology refers to the overall approach to the design process from the theoretical underpinnings to the collection and analysis of the data (Collins and Hussey, 2003). There are many factors to be considered when choosing an appropriate research methodology; the topic to be researched and the specific research question are the primary drivers in the choice of methodology (Remenyi *et al.*, 1998). Although a research process always has associated risks and uncertainties, an appropriate methodological framework within which the research is carried out, has the potential to minimise these risks. Thus, this is where the need for a ‘research design’ arises (Yin, 2009). In a more general sense, the ‘research design’ means all the issues involved in planning and executing a research project from identifying the problem through to reporting and publishing the results (Punch, 2005). Research design situates the researcher in the empirical world and connects the research questions to empirical data and ultimately, to its conclusions (Punch, 2005; Yin, 2009).

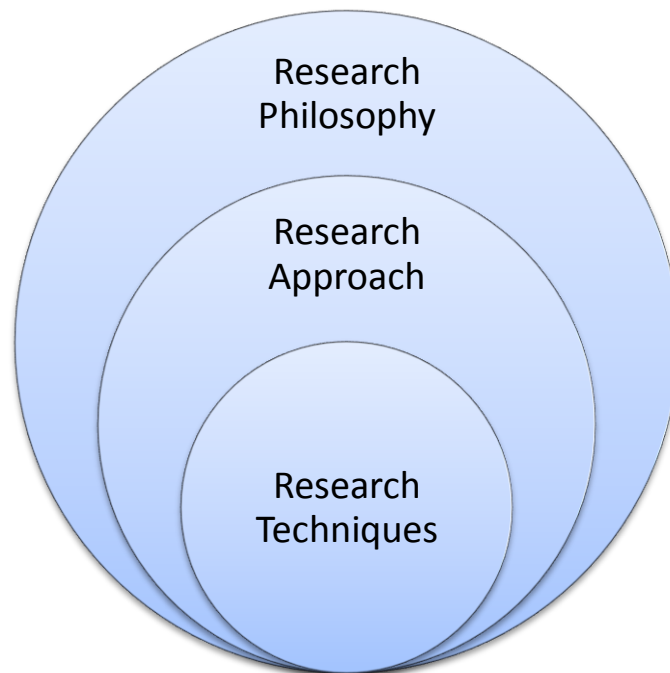


Figure 3-1: Research methodology ‘nesting’ (Kagioglou *et al.*, 1998)

This study adopts the hierarchical ‘nesting’ model of research methodology by Kagioglou *et al.* (1998). This conceptual model (Figure 3-1) maintains the direction and cohesion of elements in representing a holistic research methodology. Within this nested approach, the

research philosophy found at the outer ring “*guides and energises the inner research approaches and research techniques*” (Kagioglou *et al.*, 1998).

Research philosophy refers to the triggering assumptions about the development of knowledge and the nature of that knowledge (Saunders *et al.*, 2007). Research approaches consist of the dominant theory generation and testing methods while research techniques comprise data collection tools and analysis tools (Kagioglou *et al.*, 2000). The nested approach first guides the researcher to understand the philosophical stance of the study and to define the background assumptions of the research approach. This leads to the selection of appropriate research techniques as the tools of research approach. With this integrated framework, the most suitable research methodology for the study was selected.

3.3.1 Research philosophy

Partial and selective abstraction and interpretation are inevitable facts of the process of knowledge creation. Thus, the process of creating and legitimising knowledge requires a proper understanding of philosophical underpinnings of the research design. Philosophy is primarily concerned with rigorously establishing, regulating and improving the methods of knowledge creation in all fields of intellectual endeavour (Chia, 2002). According to Easterby-smith *et al.* (2008), there are at least three reasons for the importance of understanding the philosophical issues of research. First, it can help to clarify research designs. Second, knowledge of philosophy can help the researcher to recognise which design will work and which will not. Third, knowledge of philosophy can help the researcher to identify and even to create designs that may be outside the researchers past experience. Collis and Hussey (2003) further suggest the use of philosophy to adapt research designs according to constrains of different subject or knowledge structures.

The research philosophy is principally concerned with the assumptions that a researcher brings to an investigation. It deals with questions about nature and reality which influence the attitude of mind. Hence, in philosophical inquiry, the facts, the theory, the alternatives and the ideals are brought together and weighed against each other in the creation of knowledge and action (Chia, 2002). Although there is considerable blurring, the two main traditions of philosophies can be labelled as positivism and social constructionism/phenomenology (Collins and Hussey, 2003; Easterby-Smith *et al.*, 2008).

While positivists argue that the world exists externally and its properties should be measured through objective methods, social constructionists hold the view that the reality is not objective and exterior but is socially constructed and given meaning by people (Easterby-Smith *et al.*, 2008). Table 3-1 outlines the contrasting implications of positivism and social constructionism.

Table 3-1: Contrasting implications of Positivism and Social Constructionism

	Positivism	Social Constructionism
<i>The observer</i>	Must be independent	Is part of what is being observed
<i>Human Interest</i>	Should be irrelevant	Are the main drivers of the science
<i>Explanations</i>	Must demonstrate causality	Aim to increase general understanding of the situation
<i>Research progress through</i>	Hypotheses and deduction	Gathering rich data from which ideas are induced
<i>Concepts</i>	Need to be operationalised so that they can be measured	Should incorporate stakeholder perspectives
<i>Units of analysis</i>	Should be reduced to the simplest terms	May include the complexity of 'whole' situation
<i>Generalisation through</i>	Statistical probability	Theoretical abstraction
<i>Sampling requires</i>	Large numbers selected randomly	Small numbers of cases chosen for specific reasons
<i>Methods used</i>	Experiments, Surveys, Case study, Simulation, Modelling	Case study, Ethnography, Action research

Source: Adopted from Easterby-smith *et al*, 2003

By considering the above listed characteristics, the social constructionism approach was deemed to be more appropriate to this research than the traditional positivist philosophy. As set out in the aims and objectives, this research aims to interpret and increase the understanding of leadership practices to address the cultural and behavioural challenges in construction partnering projects. This is largely a theory building attempt by inductive methods of data gathering and it focuses on an in-depth study with an uncontrolled environment. Furthermore, this research involves the investigation of complex interaction between leaders, followers, teams and processes in a real life context. This leads to research which addresses the subjective aspects of human activity, focusing on the meaning rather than measurement of leadership phenomenon. The involvement of the leadership phenomenon holds a very high degree of belief that the reality is dependent on

the mind. As such, it disqualifies itself from embracing a strong positivist approach and takes a social constructionism stance as the appropriate philosophical underpinning.

Components of philosophical grounding is analysed below to support this selection. Chia (2002) points out that *'philosophical thinking revolves around the four pillars of metaphysics, logic, epistemology and ethics'*. Metaphysics is concerned with explaining the fundamental nature of being and the world where the nature of reality and the enquiries of ontology are central. Ethics is related to axiology and defines moral evaluation and judgement. Logic deals with methods of reasoning that is employed in apprehending reality and enables establishment of how certain knowledge claims are arrived at and legitimated, and hence the validity and reliability of such knowledge claims. This study of logic is further explained in Section 3.6.

According to Creswell (2007), philosophical thinking revolves around ontological, epistemological, axiological, rhetorical and methodological assumptions. While ontological, epistemological and axiological assumption positions the philosophical stance of a research, rhetorical and methodological assumptions are concerned with language and process of the research respectively. The following sections state the ontological, epistemological and axiological assumptions to position this research on the philosophical continuum, before embarking on the research design.

3.3.1.1 Ontological assumptions

In ontological positioning, the researcher is to decide whether the reality is objective and external to the researcher, or socially constructed and only understood by examining the perceptions of the human actors (Collins and Hussey, 2003). In the ontological assumption, the two extremes are that the world is objective and external to the researcher, or that the world is subjective and only understood by examining the perceptions of human actors (Collins and Hussey, 2003). Thus, the external world has a predetermined nature and structure, which is called by different terms by different authors, such as 'realism' by Johnson and Duberly (2000), 'objectivism' by Saunders *et al.* (2007) or the external world does not have a pre-determined nature or structure, which is called 'idealism' by Gummesson (1991) and 'subjectivism' by Saunders *et al.* (2007). In qualitative research, researchers hold the idea of multiple realities and different

researchers hold different realities, as also do the individuals being studied and the readers of a qualitative study (Creswell, 2007).

The literature synthesis corroborates the existence of cultural issues and leadership practices which are relationships and meanings sustained through a process of human action and interaction. This symbolic discourse (Collins and Hussey, 2003) and social construction of reality, together with the explorative nature of this study resembles idealist assumptions. However, the research does not support the extreme reality of the phenomenologist approach. Thus, the ontological position of the research is indicated with vertical block arrow in Figure 3-2.

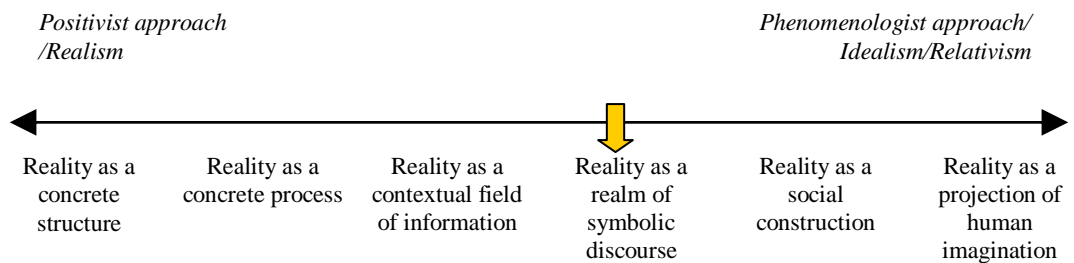


Figure 3-2: Continuum of core ontological assumptions

Source: Morgan and Smircich (1980) and Collis and Hussey (2003)

3.3.1.2 *Epistemological positioning*

Epistemological positioning deals with questions about how and what is possible to know (Chia, 2002). Easterby-Smith (2008: p.60) defines ‘epistemology’ as “*the general set of assumptions about the best ways of inquiring into the nature of the world*”. The epistemological assumptions of a researcher are helpful in leading the researcher to adopt methods that are consistent with his or her initially accepted epistemology (Easterby-Smith *et al.*, 2008). Therefore, having a clearer idea about epistemological undertakings of the research study is essential.

At one side of the epistemological continuum, the positivist assumes that there is a reality which exists independently of the observer and hence the job of the researcher is merely to identify this pre-existing reality. In contrast, constructionists do not assume any pre-existing reality and the aims of the researcher are to understand how people invent structures to help them make sense of what is going on around them (Easterby-Smith *et*

al., 2008). Similarly, this research does not assume any pre-existing reality and it aims to interpret and understand how leaders can address cultural and behavioural challenges with unstructured characteristics. It focuses on the collected construction of social phenomena and closely resembles the ideas of social constructionists. However, this research concentrates only on leadership practices in addressing cultural and behavioural challenges rather than multiple realities, thus an extreme social constructionism perspective of the epistemological stance is avoided.

3.3.1.3 Axiological values

Axiological positioning is concerned with values (Saunders *et al.*, 2007). Axiology concerns assumptions about the value that the researcher attaches to the knowledge. It is twofold; the reality is value-free or value-laden. Value-free means that the choice of what to study and how to study can be determined by objective criteria, i.e. in value-free research. However, value-laden takes a different view as research choice is determined by human beliefs and experience (Easterby-Smith *et al.*, 2008). Positivists believe that science and process of research is value free. At the other extreme social constructionists consider that researchers have values, and these values help to determine what are recognised as facts and the interpretations which are drawn from them (Collins and Hussey, 2003). This research takes up the value-laden stance due to its interpretative nature and due to the involvement of the researcher in what is being studied. Further, the researcher's and people's own values also play a critical role in arriving at the conclusions of this study.

3.3.1.4 Philosophical positioning

By analysing ontological, epistemological and axiological assumptions of the research, the philosophical positioning of the research is shown in Figure 3-3. While taking an idealist view in ontological assumptions it holds a social constructionism stance in epistemological undertakings with value laden axiological position (Thurairajah *et al.*, 2006d). As guided by selected methodological framework this philosophical positioning influences the selection of appropriate research approach.

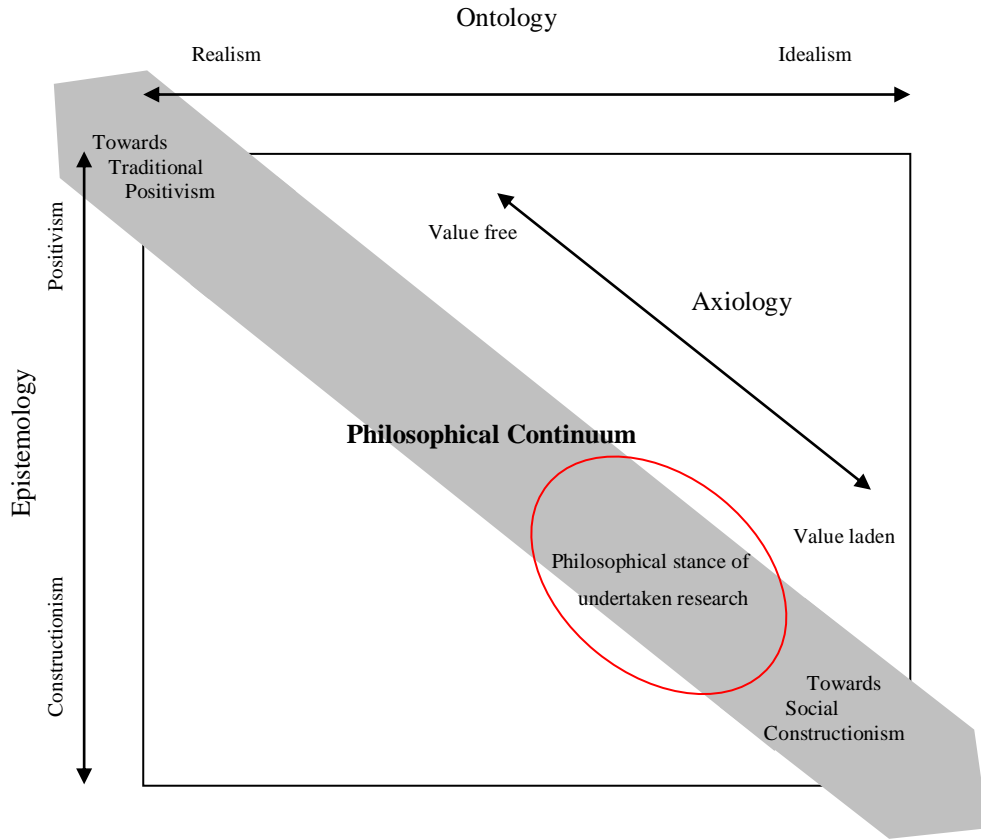


Figure 3-3: Continuum of philosophical assumptions

Creswell (2007) further details the practical application of the above discussed philosophical assumptions within qualitative research as presented in Table 3-2.

Table 3-2: Philosophical assumptions in qualitative research with implications for practice

Assumption	Question	Characteristics	Implications for practice (examples)
Ontological	What is the nature of reality?	Reality is subjective and multiple, as seen by participants in the study	Researcher uses quotes and themes in words of participants and provides evidence of different perspectives
Epistemological	What is the relationship between the researcher and that being researched?	Researcher attempts to lessen distance between himself and that being researched	Researcher collaborates, spends time in field with participants and becomes and 'insider'
Axiological	What is the role of value?	Researcher acknowledges that research is value-laden and biases are present	Researcher openly discusses values that shape the narrative and includes his or her own interpretations in conjunction with those of participants

(Source: Creswell, 2007)

3.4 Research approach

Research approaches are about organising research activity and embodying data collection, in ways that are most likely to achieve the research aims. They are guided by philosophical underpinning and energise the appropriate methods of research techniques. According to Easterby-Smith *et al.* (2008), key conditions in choosing appropriate research approach closely relate to the basic dichotomy between the use of positivist and social constructionist approaches. There are a number of research approaches, of which each can be used for exploratory, descriptive and explanatory research (Yin, 2009). Some of these clearly belong to the deductive approach and others to the inductive approach (Saunders *et al.*, 2007). A deductive research method entails the development of a conceptual and theoretical structure prior to its testing through empirical observation (Gill and Johnson, 2002), which is particularly useful in theory testing. Conversely, the induction method involves theory building where a theory is developed from the observation of empirical reality (Gill and Johnson, 2002). Figure 3-4 is adopted to map the main research approaches that are governed by research philosophies.

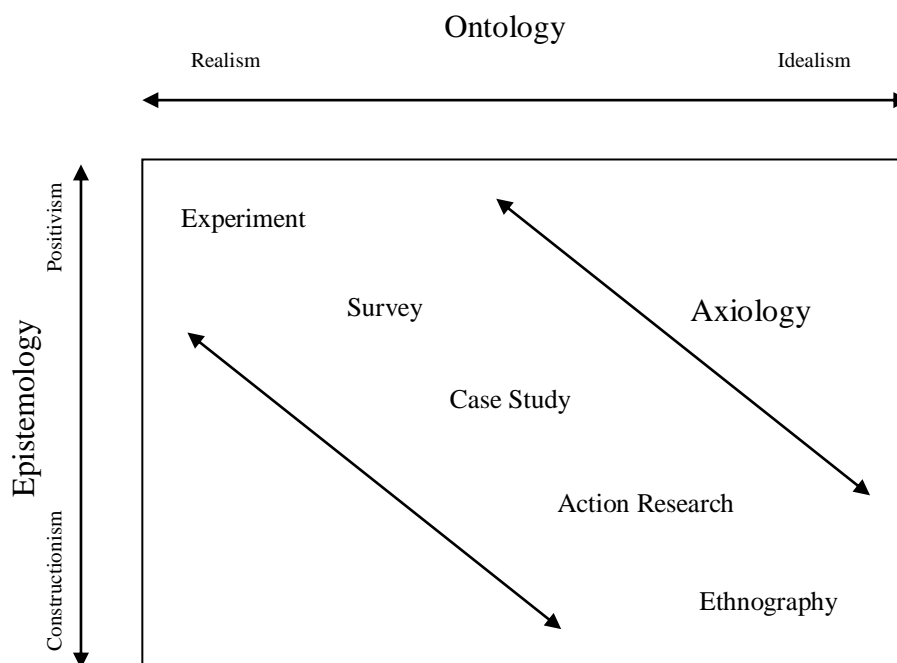


Figure 3-4: Positioning of research approaches within the continuum of philosophical assumptions

Source: Adapted from Sexton (2003)

According to Yin (2009), the selection of appropriate approach to undertake social research is based on (a) type of research question posed, (b) the extent of control an investigator has over actual behavioural events and (c) the degree of focus on contemporary as opposed to historical events. In addition, Saunders *et al.* (2007) admit that the objectives of the study, the extent of existing knowledge, the amount of time and resources the researcher has available and the researcher's own philosophical underpinnings guide the selection of appropriate research approach. However, the primary focus is whether the selected approach will enable the researcher to answer the research questions and meet the objectives of the study (Saunders *et al.*, 2007).

It is evident that research approaches are governed by different research philosophies. Research approaches such as experiments and surveys are mainly deployed in research taking up a more realism view in terms of ontological undertakings, objective measures in terms of the epistemological undertakings and a value-free view in terms of axiological undertakings. In contrast, research approaches such as case study, ethnography, and action research are suitable for research taking up the idealism view in terms of ontological undertakings, subjective measures in terms of the epistemological undertakings and a value-laden view in terms of axiological undertakings.

As per the selection by philosophical positioning, this research takes a social constructionism stance. Since this research resides mainly within social constructionist territory, experiment and general survey strategies are incompatible with this research. The ontological assumption of a strong 'pre-existing reality' in experiments, and which requires a high level of control over the environment by the investigator directly, precisely and systematically manipulates the reality (Yin, 2009). This can only occur in laboratory conditions and a pure experimental design cannot manipulate behaviour in a real life context. Furthermore, the undertaken research entails fieldwork, and as such experiments are disqualified from being a suitable research approach. In contrast, a survey does not require high control over the environment. A survey can be readily designed to enumerate the 'what' type of exploratory questions and they can be easily applied in social science research. The major limitation of the survey strategy is that it is hard to explain an observed pattern and it fails in adequately answering a 'why' type of question (Easterby-Smith *et al.*, 2008). This research requires an in-depth analysis on leadership practices, with the combination of 'what' and 'why' type of questions in addressing cultural and

behavioural challenges. Hence, experiment and general quantitative survey approaches are inappropriate for this study.

This leaves case study, action research and ethnography strategies as suitable approaches, in which case study was selected as the main research approach for this research. All ethnography, action research and case studies are adopted for exploration analyses and therefore a distinction cannot be made within these research approaches in terms of exploration. In action research the researcher tries to solve the problem by being a part within the problem environment with the goal to change the status quo of the participants (Waser and Johns, 2003). As Argyris and Schon (1989) state, action research builds descriptions and theories within the practice context itself and tests them there through intervention experiments. This participative, partly controlled approach, is concerned with the process of enquiry to form a cycle of planning, acting, observing and reflecting (Collins and Hussey, 2003; Heller, 2004). Conditions such as being partly controlled, having participative observation and intervention disqualify action research from being the appropriate research approach. Similarly ethnography is defined as a study of people in fields to capture the social meaning, involving the researcher participating directly in the setting, if not also the activities to collect data in a systematic manner (Brewer, 2004). Even though ethnography does not operate in partly controlled environments, it still requires access to participant observation. This is obviously a research approach that is very time consuming and takes place over an extended time period, as the researcher needs to immerse himself or herself in the social world being researched as completely as possible and most ethnographic approaches involve extended participant observation (Saunders *et al.*, 2007).

Thus, case studies are more appropriate than action research or ethnography for this research as case studies deal with 'what' and 'how' type research questions about a contemporary set of events, without differentiating between phenomena and context, where the researcher tends not to interfere with what is being studied. Further the requirement to analyse leadership practices in a real life context to address the cultural and behavioural challenges without controlling actual behavioural events justifies the selection of case study as the appropriate research approach.

A case study is defined as “*an empirical inquiry that investigates a contemporary phenomenon within a real life context, especially when boundaries between phenomenon and context are not clearly evident*” (Yin, 2009: p.18). According to Eisenhardt (1989), the case study is a research approach that focuses on understanding the dynamics present, within a single setting. Similarly, Creswell (2007) argues that case study research involves the study of an issue explored through one or more cases within a bounded system i.e. a setting, a context. However, Yin (2009) points out that the boundaries between the case and the context are not necessarily clearly evident. However, it is quite important to identify and describe the boundaries of the case as clearly as possible (Punch, 2005).

There are strengths and weaknesses of using case studies as a strategy to build theories. Among the strengths, are that it provides a theory which is based on empirical data and enables verification through the use of measurable constructs using multiple sources of data. Case studies provide the opportunity of dealing with a full variety of evidence such as documents, archival records, interviews, direct observations, participant-observation and physical artifacts (Yin, 2009). Further, it often leads to the creation of new theoretical versions as the case study progresses. On the other hand, the weakness is that it can result in a less generalisable theory, if the cases are very much context specific.

Eisenhardt (1989) further emphasises the fact that case study research starts with a deductive reasoning approach and a problem definition, and leads to an inductive reasoning process of theory building. This is further supported by Yin (2009: p.35), as he states: “*...the role of theory development, prior to primary data collection, is one point of difference between case studies and related methods*”. Therefore, additional steps were taken in this research prior to applying the case study approach. Specifically, a conceptual framework was developed through a literature review and a series of expert interviews. This process has further been discussed under the operational aspects of the research and presented in the next section.

3.4.1 Operationalising philosophical position

The operational aspects of this research are based on the principles of the hermeneutic approach within the principles of the interpretive research paradigm. Paterson and Higgs (2005) point out that the practical aspect of the hermeneutic circle involves repeatedly and

cyclically alternating between the aspects (parts) of the phenomenon being investigated and the complete picture of the phenomenon (whole). The aim of this circle is to gain a growing understanding of the phenomenon. This signifies the importance of having some pre-understanding of the whole and the ability to gain improved understanding about the phenomenon through contextualisation of the relevant parts. Hence, every time a circle is completed, a new circle is started with an elevated understanding about the phenomenon being investigated. In essence, this forms the basis for the creation of new understanding about the issue under investigation. This is considered as hermeneutic spiral, in which the understanding of the phenomenon being investigated is improved, and becomes a pre-understanding to a further investigation (Gummesson, 1991; Paterson and Higgs, 2005). Figure 3-5 illustrates the principles of hermeneutic spiral adopted within this research.

At the beginning of a research project, the researcher starts the study with a certain pre-understanding. During the research, understanding of the phenomenon is generally developed using secondary data and primary data. Through a review of literature, or secondary data available about the phenomenon the researcher gains an understanding of the subject. This becomes a pre-understanding for the next stage of the study as shown in Figure 3-5. Starting with this pre-understanding, the researcher may then conduct, perhaps, an empirical investigation about the phenomenon. This generates the next level of pre-understanding and this spiral may continue until the researcher feels comfortable with the level of understanding gathered about the phenomenon. Figure 3-6 provides the mapping of research operations undertaken in this research on the principles of the hermeneutic approach.

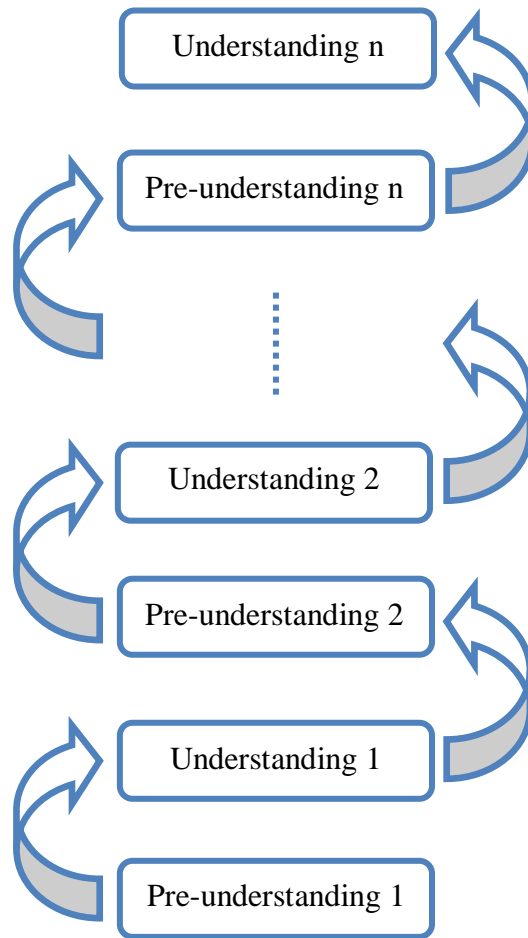


Figure 3-5: The hermeneutic spiral - adopted from Gummesson (1991)

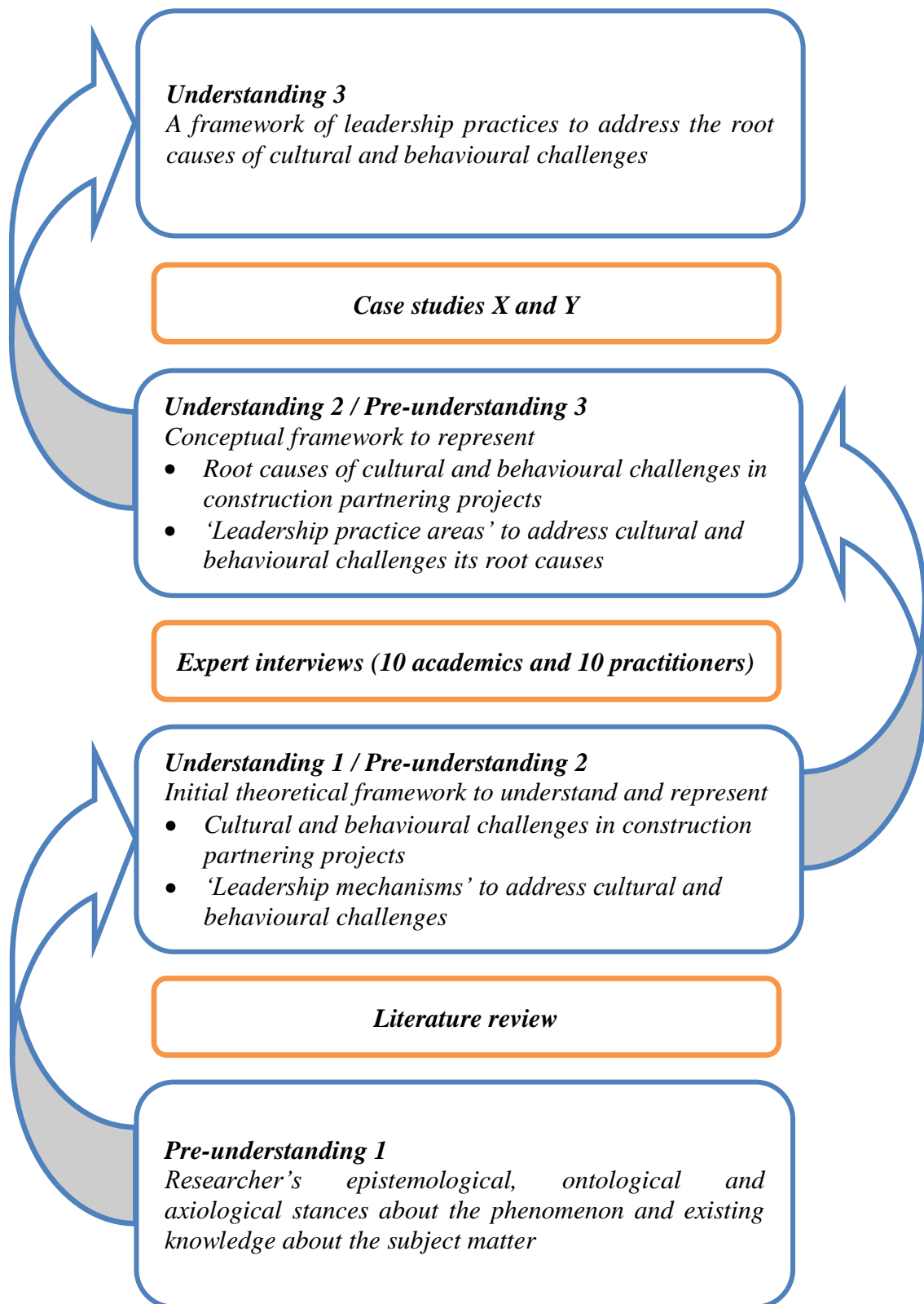


Figure 3-6: Mapping the research operations in a hermeneutic spiral

As discussed in the above section, the research objectives (refer to Section 3.2.3) were tackled using different methods. Table 3-3 maps the research objectives against research methods used within this study.

Table 3-3: Different operations used to investigate the objectives

Objectives	Investigated through:
Investigate the cultural and behavioural challenges in construction partnering projects	Literature review (Chapter 2) and Systematic literature review (Section 4.2)
Identify the root causes of cultural and behavioural challenges in construction partnering projects	Literature review (Chapter 2) and Expert interviews (Section 4.3)
Establish 'leadership practice areas' to address cultural and behavioural challenges and its root causes in construction partnering projects	Literature review (Chapter 2) and Expert interviews (Section 5.2) and Case studies (Section 5.3)
Evaluate 'leadership practices' to address cultural and behavioural challenges and its root causes in construction partnering projects	Expert interviews (Section 5.2) and Case studies (Section 5.3)
Develop a framework of leadership practices to address the root causes of cultural and behavioural challenges	Expert interviews (Section 5.2) and Case studies (Section 5.3)

Within the hermeneutics spiral presented above, the operations of the case study phase further depend on several design parameters. The following section further examines this approach by considering the specific case study design of this study.

3.4.2 Case study design

As shown in Figure 3-7 case study designs are categorised into four types according to a 2X2 matrix concerned with choice between single or multiple units of analysis and holistic or embedded design situations (Yin, 2009). The primary distinction in designing case studies is between single and multiple designs. Being either a critical, unique or revelatory case provides the rationale to select the single case method over multiple cases. In contrast, researchers deliberately select multiple case studies to show different perspectives of the issue under consideration (Creswell, 2007). The evidence from multiple case studies is often considered more compelling and the overall study therefore tends to be more robust (Creswell, 2007). As Yin (2009) highlights, a multiple case study

strengthens the foundation for the usage of replication logic by adding multiple sources of evidence and supports the function of theory building and theory modification.

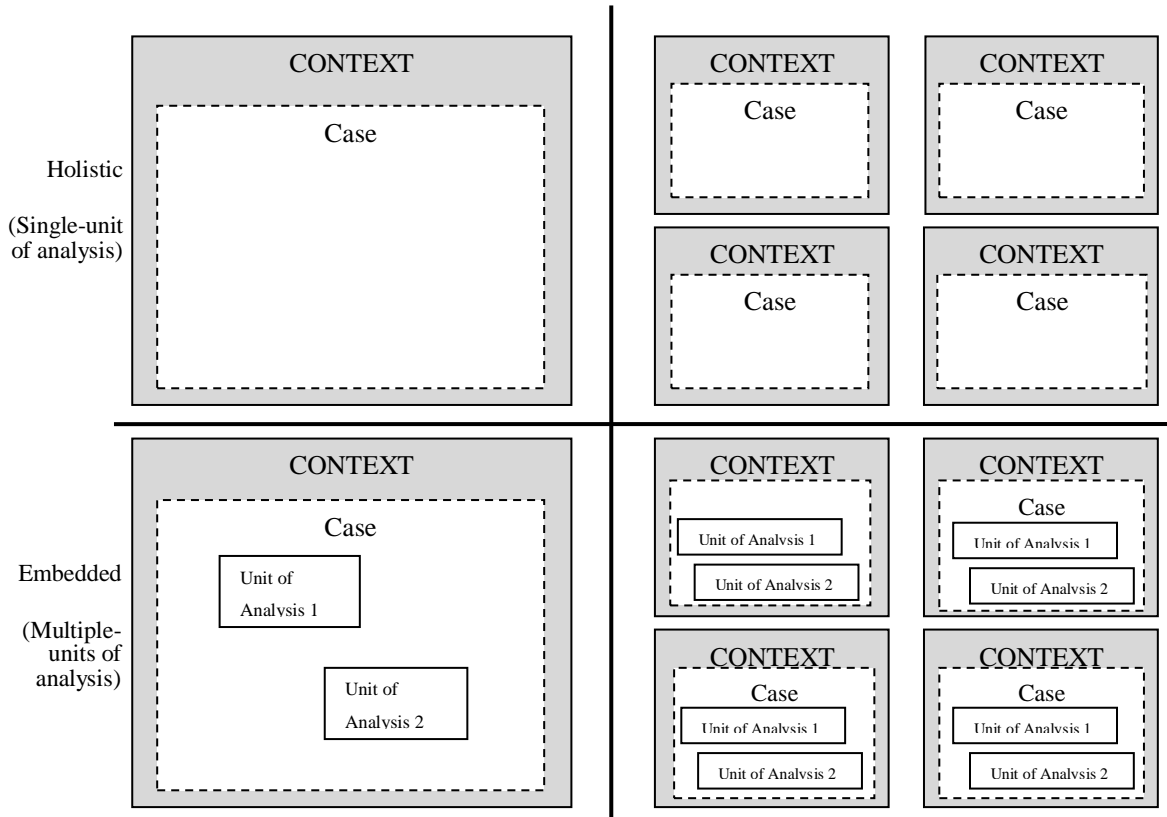


Figure 3-7: Basic types of designs for case studies

(Source: Yin, 2009)

Given that this research does not involve any critical, unique, representative, revelatory or longitudinal case, the multiple case study method was chosen over the single case study. Generally by using multiple case studies, a researcher can increase the breadth of a study. As such, the multiple case study approach was selected with two cases to satisfy the time constraints of this research. This is to focus on the quality of case study design and conducting a rigorous case study, because the contribution to knowledge by two properly designed and suitably conducted case studies would be considered greater than the contribution to knowledge by many poorly designed multiple case studies.

Miles and Huberman (1994) define the unit of analysis as the heart of the study. The unit of analysis pertaining to this study is established in the following section.

3.4.3 Unit of analysis

The actual “*unit of analysis is related to the fundamental problem of defining what the ‘case’ is*” (Yin, 2009). Miles and Huberman (1994) define the unit of analysis of a study as a phenomenon of some sort of occurring in a bounded context. An appropriate definition of the unit of analysis influences the subsequent lines of inquiry within a case study. It is the focal point where the variables, phenomena and the research problem refer to and about which the data is collected and analysed (Collins and Hussey, 2003).

The centre of this research is focused on leadership practices that address cultural and behavioural challenges in partnering projects. Hence, the unit of analysis for this research is taken as the leadership practices within the boundaries of any construction partnering project. In this research, leadership is considered as a process of influencing people to willingly strive towards the achievement of organisational goals (refer to Section 2.4 of Chapter 2). Hence, it becomes important to understand the views of the main participants of the project to capture leadership practices. This holistic view of leadership practices requires the selection of ‘holistic multiple case design’ for this research.

3.4.4 Selection of case studies

In the process of selecting relevant case studies, the main focus should be given to the most suitable case studies that would answer the research questions of the study. This process is called ‘case screening’ (Yin, 2009). This study used theoretical and purposive sampling strategies as opposed to the probabilistic sampling strategy in selecting cases from the chosen population. Case study selection based on probabilistic sampling was not considered for this study because the intention of the researcher was to gain a deeper understanding about the phenomenon being studied, to develop theories and to generalise to the theoretical propositions rather than to generalise the findings to the whole population. Purposive sampling selects the cases when it illustrates features or processes that the researcher is interested in (Silverman, 2001). However, Silverman (2001: p. 21) claims that “*there is only a slight difference between purposive and theoretical sampling where the former selects the cases without theoretical grounds and owing to the practicality of the study, whereas the latter has theoretical grounds*”.

It is imperative to identify the population because it is from this that the research sample or the relevant case studies are to be drawn (Eisenhardt, 1989). The selection of an appropriate population controls extraneous variations and helps define the limits of generalising the findings (Eisenhardt, 1989). The literature review and the expert opinions gathered from the interviews highlighted the need to select successful, large scale partnering projects within the UK where collaborative working ways were upheld. This is due to the fact that large scale projects provide an incentive to the project participants to drive change to achieve efficient, safe, productive and profitable outcomes. Furthermore, it is also important to identify projects that were delivered on time within budget to the satisfaction of the client.

After that, it became essential to define a set of operational criteria whereby potential cases were deemed qualified to serve as cases, as emphasised in Yin (2009). As this study used multiple case studies, it became necessary to select cases that best fit the application of literal or theoretical replication design. Therefore, partnering projects with similar characteristics such as scale, type of framework arrangement and location were selected for this study. The screening process involved questioning people with knowledge about each case and then collecting relevant documentation from the cases prior to short listing them for the study. This had been identified as one of the steps in the case study screening process by Yin (2009). For this study, information was gathered from academic and industry practitioners and the final selection was made based on the purposive and theoretical sampling methods.

3.4.5 Theory building from case studies

Gill and Johnson (2002: p. 31) define theory as a “*network of hypothesis advanced so as to conceptualise and explain a particular social or natural phenomenon*”. Continuous refinement between theory and practice is vital for effective theory building (Lynham, 2000). This requires ongoing comparison of data and theory (Glaser and Strauss, 1967). Theory can be generated through combining observations from previous literature, common sense, and experience, all of which had been used in past centuries (Eisenhardt, 1989). However, Glaser and Strauss’s (1967) strong perception articulate that discovery of testable, relevant, and valid theory can be done through close connection with empirical reality that permits the discovery of theory from data. Therefore, the mode of theory

building is a matter of epistemological assumption as to whether it is data or theory that is the lead.

Saunders *et al.* (2007) list the deductive process and inductive process as two main modes of developing theories. Deductive research method is that which involves development of a conceptual and theoretical structure prior to its testing through empirical observations (Gill and Johnson, 2002). In contrast, the inductive research method involves moving from the observations of the empirical world to the construction of explanations and theories about what has been observed (Gill and Johnson, 2002). The deductive process largely supports a positivist view, whereas the research in question is geared towards the social constructionist paradigm.

This research uses the case study approach for the purpose of theory building. As discussed in Section 3.2, this research started with a research problem, and research questions and a theoretical framework were developed, before embarking on data collection. This is further explained in Section 3.4.1. These few activities indicate the deductive nature of this research. Eisenhardt (1989) highlights the importance of having an initial definition of the research question prior to beginning theory building. She states that, otherwise, the researcher can become overwhelmed by the amount of data gathered. Moreover as Saunders *et al.* (2007) noted, it is often advantageous to combine deduction and induction within the same piece of research. Similarly, Yin (2009) emphasises the need for pre-establishing a theory or conceptualising the phenomenon prior to data collection and analysis process. Thus, this research used the deductive approach at the initial stage (by developing research questions and theoretical framework) with a gradual move towards the overall inductive approach (by collection of data and finally building a theory). Therefore, this research has adopted a mix of both deductive and inductive approaches, with an overall leaning towards the inductive process.

3.5 Research techniques

According to the nested model (see Figure 3-1), the innermost ring refers to the research techniques, which represent the data collection and analysis techniques. The following section examines data collection techniques with particular reference to this study.

3.5.1 Research techniques for data collection

There are various research techniques available for data collection, such as observations, document reviews, interviews, questionnaire surveys and audio-visual materials. In addition, in this research, a systematic review method was used in the initial stages to collect and analyse existing information regarding cultural and behavioural challenges before embarking on finding its root causes and leadership practices.

3.5.1.1 Systematic review method

The literature synthesis in Chapter 2 both maps and assesses the relevant intellectual territory in order to specify a research problem. Here, a traditional narrative review was undertaken to identify the knowledge gap and to explore related issues. This led to the identification of ‘construction partnering challenges’. This defines the direction of the research and it is very important to devise a means by which critical literature and underpinning research can be rigorously and systematically mapped out. This notion is further elevated by the accelerating pace of knowledge production in construction partnering over the past decade, which has resulted in a body of knowledge that is increasingly fragmented as well as being interdependent. In order to fully understand the prior research in this field and to identify major cultural and behavioural challenges, a systematic literature review (Tranfield *et al.*, 2003) was undertaken.

In order to create a knowledge base of the best available evidence, it is important to develop rigorous and reliable review methods. Many disciplines, especially medicine, have made significant strides in creating formalised procedures to synthesise and disseminate existing research (Denyer and Neely, 2004). The British central government has placed increasing importance on ensuring that policy and practice are informed through a more rigorous and challenging evidence base. In medicine during the early 1990s, it was acknowledged that poor evaluations of the research evidence could lead to harmful results if inappropriately interpreted or applied (Cook *et al.*, 1997a). Since then, medical science has made significant strides in attempting to improve the quality of the review process by synthesising research in a systematic, transparent and reproducible manner to inform policy and decision making (Cook *et al.*, 1997b; Tranfield *et al.*, 2003). As a result of this, a novel approach, evidence-based Medicine, was developed and its

notion permeated into health policy. Later, other domains such as social care, nursing, criminal justice, regeneration and education also started using this approach as a policy related decision-making process (Denyer and Neely, 2004).

In 2003, Tranfield *et al.* (2003) published a seminal paper in devising a methodology for evidence-informed management knowledge by means of systematic review. It evaluates the extent to which the process of a systematic review can be applied to the management field in order to produce a reliable knowledge stock and enhanced practice by developing context-sensitive research. Systematic review is seen as the heart of a pragmatic management research that aims to serve both academia and industry. While the reviewing process increases methodological rigour for academic purposes, it also helps practitioners and managers to develop a reliable knowledge base by accumulating knowledge from a range of studies.

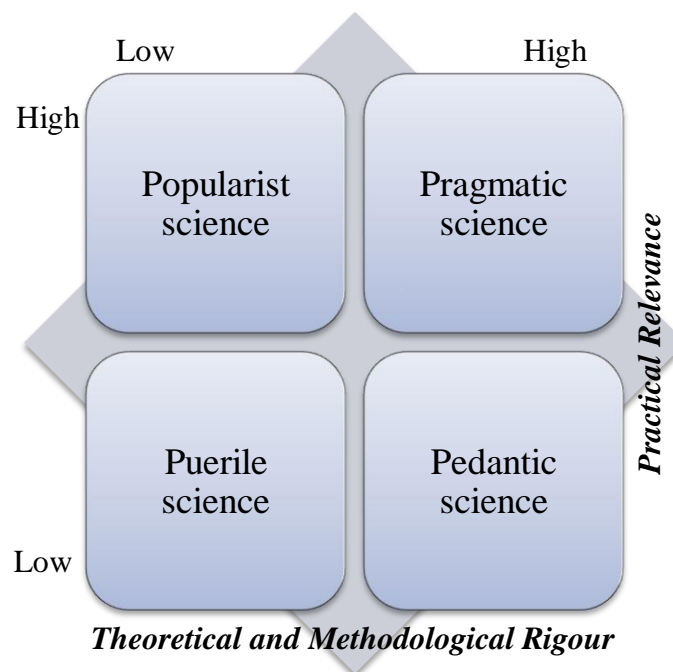


Figure 3-8: A four-fold typology of research in industrial, work and organisational psychology (adapted from Anderson *et al.*, 2001)

The outlined research problem is practical in nature and requires methodological rigour to contribute to the existing context specific body of knowledge. Practitioners and researchers have often held stereotypical views of each other, with practitioners viewing researchers as interested only in methodological rigour whilst failing to concern themselves with anything in the real world, and researchers damning practitioners for embracing the latest fads, regardless of theory or evidence (Anderson *et al.*, 2001).

Anderson *et al.* (2001) propose a simple 2 x 2 model (Figure 3-8) against this backdrop. This model does not require a choice between practical relevance and methodological rigour.

Anderson *et al.* further explain the ‘fourfold typology’ of research in the following manner. According to this study, ‘Popularist Science’ is generated where practical relevance is high, but methodological rigour is low. Studies of this nature address a theme widely recognised as relevant, but fail to do so with sufficient rigour to permit any credibility and reliance upon their findings. This also applies to fields where studies fail to apply appropriate peer review and refereeing procedures prior to publication, resulting in a notable absence of quality control over reports of studies available in the public domain (Anderson *et al.*, 2001). ‘Pragmatic Science’ is where both practical relevance and methodological rigour are high. Such work simultaneously addresses questions of practical relevance and does so in a methodologically robust manner. Where methodological rigour is high but practical relevance is low, ‘Pedantic Science’ is generated. This type of study is firm in its design and analytical sophistication yet fails to address an issue of current industry relevance. Such research usually derives its questions from theory or from the existing published body of knowledge which is extraneous to industry issues. ‘Puerile Science’ emerges from misguided authors who pursued issues of unacceptably low practical relevance, and have done so using research designs and methods lacking in rigour.

Denyer and Trannfield (2006) point out that the disconnection between academic research and practice is a phenomenon common in both the physical and social science disciplines. An evidence-based approach to overcome this challenge can be adopted, which puts synthesised findings from systematic literature reviews at the service of experienced professionals. The construction industry requires rigorous practice and relevant research because both requirements are of crucial importance. Hence, a ‘Pragmatic Science’ research approach is very relevant to the construction industry and ideally suits the outlined research.

The outline research begins with the issues surrounding widely held industry problems, such as an adversarial culture and the fragmented industry structure. In this sense, developments in construction partnering, recent concerns about its evolution, behavioural

challenges, and relevant leadership practices, show the practical relevance of this research. This evidence, which is of a fragmented nature, needs to be combined and analysed to arrive at industry issues, rather than issues with parties to the contract. Even though many would consider these issues as less serious than those of medicine, it is necessary to improve the quality of the review process by synthesising research in a systematic, transparent and reproducible manner to produce both practical relevant and methodological rigorous research. Several authors reinforce the notion, where systematic review method is considered as an appropriate process for 'Pragmatic Science' (Tranfield *et al.*, 2003; Denyer and Neely, 2004; Tranfield *et al.*, 2004). The initial research design step, to identify construction partnering challenges, defines the direction of the research, where the systematic review method can be considered as an appropriate process by which critical literature and underpinning research is rigorously and systematically mapped out.

3.5.1.1.1 Systematic review process

Tranfield *et al.* (2003) outline a systematic review process for management in three different stages; planning the review, conducting a review and reporting and dissemination. These stages are very similar to 'Stages of a systematic review', published by the NHS centre for reviews and dissemination (2001) with recommendations towards its usage in the management field. The 'Stages of a systematic review' outline desirable methodological steps and characteristics of systematic review (Figure 3-9).

According to these guidelines, planning the review is the first of three stages in producing a high quality systematic review. This starts with establishing the need for undertaking a review. To avoid duplication of research, searches are conducted to establish whether a review is required, by exploring the existing body of knowledge in the relevant field. Then a review panel is formed encompassing a range of experts in the areas of both theory and methodology to construct a review protocol containing the background information, the problem specification and the methodology of the review. The second stage begins with conducting a thorough search to identify relevant studies and documenting the search with assessment of their quality. This framework proposes data extraction forms for this purpose. This is followed by data synthesis. A non-quantitative synthesis involves tabulation of study characteristics and results to summarise their findings. This approach allows a qualitative assessment of the evidence. This can be supplemented by quantitative synthesis, if appropriate. Finally, a succinct report is expected to be produced for reporting

and dissemination purposes. Getting research into practice goes beyond dissemination because simply making the information available may not change practices. Targeted implementation strategies may also be required to achieve this goal.

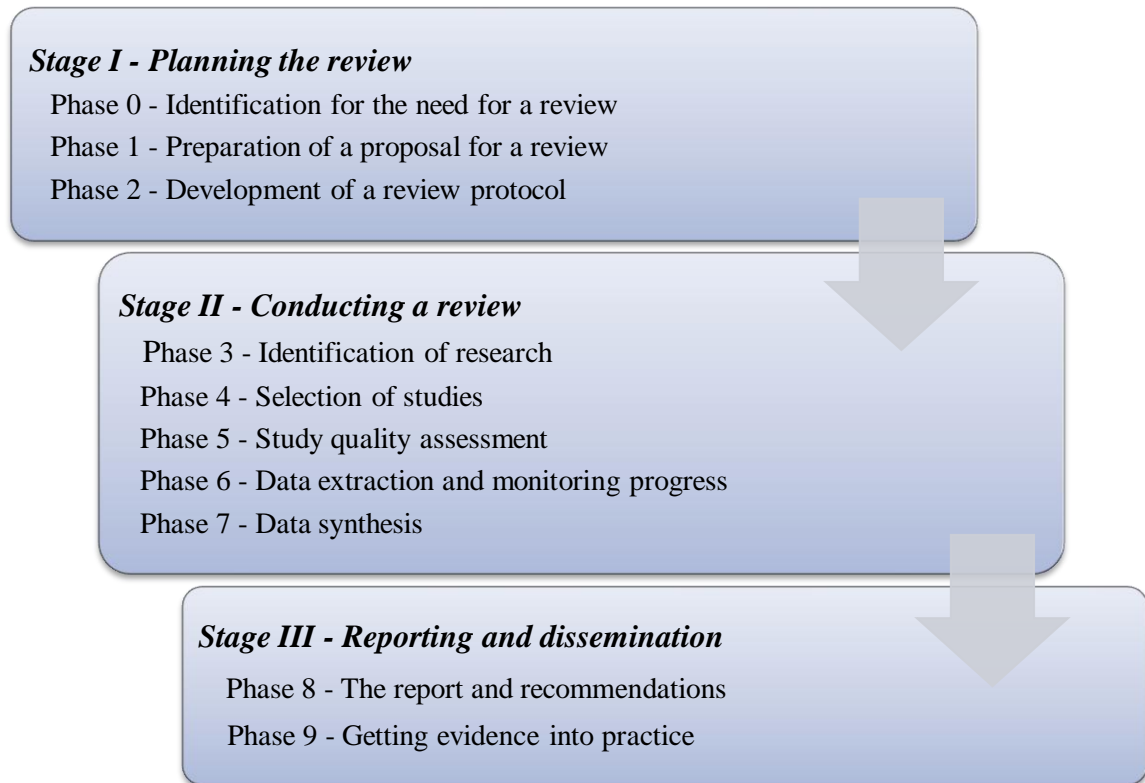


Figure 3-9: Stages of systematic review (adapted from NHS, 2001)

This comprehensive framework for systematic review is commonly used in healthcare research projects and is increasingly used in other research fields. Modified versions of this framework are commonly seen in many fields. During a PhD research process, activities of ‘planning the review’ stage are conducted at the very beginning in defining the research problem. It is further extended during the formation of aims and objectives together with research questions. A modified systematic review process, which comprises a number of distinct phases, is illustrated below. These activities mainly concentrate on ‘conducting and reporting the review’ which are suitable for a PhD research process.

- *Searching*: the systematic identification of potentially relevant studies
- *Screening*: the application of pre-determined inclusion and exclusion criteria derived from the review question to article titles, abstracts and full texts
- *Data-extraction*: the in-depth examination of studies, meeting the pre-determined inclusion and exclusion criteria, to assess the quality of the study and extract evidence in support of the in-depth review

- *Synthesis*: the development of a framework for data analysis and identification of key themes
- *Reporting and dissemination*: presentation of the review findings

3.5.1.1.2 Strengths and limitations of the systematic review

Systematic review aims to produce results that are generalisable to other contexts and can be used to make reasonable predictions of future events (Denyer and Tranfield, 2006). This brings together as many already existing evidence-based studies as possible that are relevant to the research being undertaken, irrespective of their published location, or even disciplinary background in relevant cases. Thorpe *et al.* (2005) point out basic principles and some of the general strengths of the systematic review method.

1. **Transparency:** Recorded for each search option. This includes making explicit inclusion and exclusion criteria and describing each search string and the rationale behind its selection of keywords. The review can be repeated to test its rigour and update its findings.
2. **Clarity:** A clear, series of searches are presented, allowing any reader a full 'audit trail' of how the review arrived at a final list of studies on whose evidence it reports.
3. **Focus:** Ensures that there is a close and persisting relationship between a clearly formulated question/research area and the identification of primary evidence related such a question
4. **Unifies research and practitioner communities:** designed to inform policy and practitioner perspectives by broadening the scope of dissemination, emphasising evidence and the form of the evidence.
5. **Equality:** No distinction are made between the type and nature of journals and other publication outlets and reviewed on their own merits, and the inductive, iterative methodology avoids reviewer bias.
6. **Accessibility:** Conducted on available outside the specialist, academic community in the form of reports and searchable databases.
7. **Broad coverage:** Increasingly sophisticated electronic databases allow complex search strings and protocols covering a plethora of places and forms of publication.
8. **Synthesis:** Compare, contrast and link findings from a number of research subfields that use a variety of research methodologies and published location.

Especially in the field of construction partnering, there is a growing concern about its implementation. This study focuses on the challenges and issues without dismissing the concept of partnering. This was done with the combination of a defined systematic review method and content analysis techniques. This meeting of positivist and phenomenologist philosophical underpinning allowed coding with propositional units, where cultural and behavioural perspectives of systematically identified challenges were judged.

Even though it is a time consuming review, it allows a cognitive depiction at a glance, proving issues related to culture and climate of a temporal project organisation. Furthermore, synthesis on the selected articles provides a firm foundation for setting-up an interview guideline to find root causes of cultural and behavioural challenges in partnering projects. A total of 33 studies were selected from the original 1,919 references identified for inclusion in the in-depth review. This was the result of progressive focusing that is both indispensable to the systematic review process and ensures that the evidence addresses the problem in question.

The following limitations were also found in the process as with any method of literature review.

1. **Accuracy:** Even though highest priority was given in defining keywords it is possible that some relevant studies may not have been identified due to the words used in abstract and title.
2. **Unobtainable texts:** Some texts were unobtainable and excluded from the study. Although every endeavour was made to obtain all materials considered relevant simply because of lack of availability within the given time frame.
3. **Time restriction:** Review was limited to a certain extent due to the restricted timeframe and budget. Only a selected number of databases were searched due to the academic availability.
4. **Issues with database:** Some of the databases used for this study are considered to hold most of the construction and engineering related articles. However, some journals were limited to number of years and this was evident when cross referencing. Articles which were more than 15 years old had accessibility issues and found only from cross references.

Even though it would be ideal to search with simple Boolean connectors and keywords it would have given 77 combinations for each database. Hence complex/advance options were used for search functions. However, Boolean connectors and protocols varied from one database to another and some of them failed to search due to search engine capacity. These were then collected in pieces.

Although these strengths and limitations would have influenced the review process, it provided a rigorous conceptual underpinning to outline the interview questionnaire and protocol for the data collection. This categorisation helped to focus interviews on root causes of cultural and behavioural challenges in construction partnering projects. This review process is noted for its applicability and suitability for academic research concerned with practical issues. Its usage with content analysis provides a powerful combined technique for literature review and forms a solid understanding of the problem in question. This understanding provides rigorous conceptual underpinning for the next stage of data collection, where interview questionnaire and guidelines were formed with prior knowledge and understanding of related issues.

3.5.1.2 Interviews

Interviews are widely adopted as a data collection technique in various research strategies. Even though the data collected through an interview can take the form of quantitative and qualitative, it is more widely used in qualitative research. Robson (2002) highlights three generic forms of interviews. They are: structured, unstructured and semi-structured. Marshall and Rossman (1999) state that structured interviews are more suited to cover a particular phenomenon with more generalisation (more breadth), whereas unstructured interviews provide the facility to investigate a problem in more depth. Structured interviews are conducted based on a specific predetermined set of questions, and often the questions are asked in a specific sequence. These interviews often provide a cost-effective means of gathering data from a large sample. On the other hand, unstructured and semi structured interviews are often conducted within an informal setting, allowing the interviewee to communicate the ideas related to the subject freely. Even though these interviews are time consuming during the data collection and analysis, they permit the researcher to follow up questions to clarify the issues thus allowing a deeper exploration

of the subject area (Burns, 2000). As noted by Silverman (2001) the interviews in social science strive to generate data which give an authentic insight into people's experience.

Semi-structured interviews have a formal interview guideline that can be modified as appropriate during the interview. The interviewer has the freedom to add, omit or change the questions as the interview progresses. Sharing the characteristics of both structured and unstructured interviews, semi-structured interviews are not only a cost-effective data collection technique, but also a flexible technique to explore the interviewee's knowledge and experience related to the subject matter using appropriate probes and prompts. Since this particular research requires in-depth acquisition of views from interviewees, semi-structured interviews were used as the main data collection technique for the collection of expert opinion and case studies. Since this research is leading to a PhD, there are obvious time and other resource limitations, preventing the use of a totally unstructured interview technique.

Interview guidelines were prepared prior to conducting the semi-structured interviews with the respondent following pilot interviews and several stages of revision. Prior to conducting each interview, each interviewee was given a brief introduction on the aim of the study and the purpose of the interview by using a study brief (refer Appendix F). All interviews were recorded with a digital voice recorder, with the prior approval of the interviewees, as it enabled the interviewer to pay attention to the answers given and does not require the interviewer to take down everything. After completion of the interview, they were transcribed manually using MS Word.

As described in Section 3.4.1, the first phase of empirical investigations on leadership practices to address cultural and behavioural challenges was carried out via expert interviews. 20 experts in construction partnering from built environment education and the construction industry were selected and interviewed for this study. A combination of purposive sampling methods, expert sampling and snowball sampling was adopted to select these experts (Singh, 2007; Babbie, 2010). Since Egan's seminal report on 'Rethinking Construction' in 1998, the philosophy of partnering was energised within the academic community and among industry practitioners. The 'Accelerating Change' report in 2002 (Strategic forum for construction), presented a progress map on rethinking construction philosophies. Using this date as a significant milestone, experts with a

minimum of 5 years research or/and practical experience by 2007 were selected for this study.

Academic experts were selected due to their association with significant publications, reports and projects which considered partnering related research. This expertise was linked to research areas such as process mapping, relational contracts, lean construction, partnering challenges, project management, capability maturity, and construction alliances. Table 3-4 provides the list of academic experts considered for this research.

Table 3-4: List of academic experts

Academic expert ID	Academic position	Partnering related research experience
AE01	Research fellow	5 years
AE02	Senior research fellow	9 years
AE03	Senior lecturer	9 years
AE04	Professor	More than 10 years
AE05	Senior Lecturer	More than 10 years
AE06	Senior research fellow	7 years
AE07	Professor	9 years
AE08	Lecturer	7 years
AE09	Professor	More than 10 years
AE10	Lecturer	6 years

The snowball sampling technique was used to select industry experts who had more than 5 years of practical partnering experience by 2007. As shown in Table 3-5 experts were carefully selected to represent client, consultant and contractors. They were engaged in several large scale infrastructure projects including hospitals, electricity, railways and schools.

Table 3-5: List of industry experts

Industry expert ID	Position	Partnering related experience
IP01	Quantity Surveyor	7 Years
IP02	Construction Manager	6 years
IP03	Planner	5 years
IP04	M&E Quantity Surveyor	5 years
IP05	Client Project manager	More than 10 years
IP06	Project Quantity Surveyor	6 years

Industry expert ID	Position	Partnering related experience
IP07	Project manager	More than 10 years
IP08	Construction manager	More than 10 years
IP09	Design manager	More than 10 years
IP10	Site Manager	9 years

During the case study phase, the interviews were conducted based on the interview guidelines, having considered the input from the expert interviews. Due to the nature of the study, the main project leadership members were selected for case study interviews. The contractor's project managers from both cases were able to arrange and provide accommodation to conduct these interviews. Table 3-6 summarises the details of the interviews conducted within project X. Refer to Section 5.3.1 for further details of these interviews.

Table 3-6: Details of interviewees from project X

Interviewee	Position
XPM	Client's project manager
XMC	Main contractor's senior project manager
XDM	Design manager
XSC	Subcontractor
XCM	Construction manager

The leadership team interviewed from project Y consisted of a client's project manager, contractor's project manager, a major subcontractor and supplier, design manager and construction manager. Table 3-7 summarises the details of the interviews conducted within project Y. Refer to Section 5.3.2 for further details of these interviews.

Table 3-7: Details of interviewees from project Y

Interviewee	Position
YPM	Client's project manager
YMC	Main contractor's project manager
YDM	Design manager
YSC	Subcontractor and supplier
YCM	Construction manager

3.5.1.3 Document reviews

Document review was also used during the case study phase of this research. This technique allowed the researcher to conduct studies without disturbing the natural setting. Project managers of the selected cases allowed the researcher to review documents onsite. This included project brief, outline project execution plan, construction drawings and reports on sustainability and innovation. Primarily, this was used as a secondary technique to triangulate the data collected through the case study interviews, increasing the reliability of the study.

3.5.2 Research techniques for data analysis

For the purpose of analysing the data gathered during the data collection stage of this research, two data analysis techniques were used. These are content analysis and cognitive mapping.

3.5.2.1 Coding and content analysis

The semi-structured interviews conducted within the research resulted in a significant amount of free-flowing texts that are generally called qualitative data. Due to the overwhelming amount of free-flowing data, the researcher decided on an appropriate technique that helps organise and analyse such data. Silverman (2001), Remenyi *et al.*, (1998) and Weber (1990) recognise content analysis as a qualitative data analysis technique favoured by the qualitative researchers which involves creating a set of categories based on a large amount of free-flowing texts and later counting the number of instances that fall into each category.

There are two major forms of content analysis called quantitative content analysis and qualitative content analysis (Krippendorff, 2004), an area which had been subjected to frequent discussion among researchers. While quantitative content analysis involves a mere word count, qualitative content analysis takes the form of thematic or conceptual analysis. The former approach takes more of a quantification stance as it involves quantifying words or concepts in a free-flowing text and it tends to ignore the context within which they occur and thereby do not necessarily reflect the importance of such words or concepts within a given context. Moreover, a mere word count does not usually

count the synonyms in the data sets and further the multiple meanings given by the same words may mislead researchers. These weaknesses can be overcome by using the qualitative content analysis technique which goes on identifying the main concepts or themes of data and later categorising them into codes (Krippendorff, 2004; Hsieh and Shannon, 2005). Hence, qualitative content analysis involves identifying terms that explicitly or implicitly represent concepts/themes under consideration (Weber, 1990; Hsieh and Shannon, 2005).

Although this research attempts to identify direct quotations for each concept/theme, sometimes a notion is expressed via examples and related ideas. Furthermore, the knowledge and values of the researcher helps to determine what are recognised as facts and the interpretations which are drawn from them. This study relies on the qualitative content analysis technique over the quantitative content analysis because of its beneficial nature compared to the quantitative technique.

All qualitative research typically employs coding techniques to organise and analyse free flowing text because a coding technique helps *“to move progressively from unsorted data to the development of more refined categories, themes, and concepts”* (Hahn, 2008: p. 5). The content analysis technique also employs the coding and categorising technique to analyse free-flowing subjective text. The coding process is defined by Coffey and Atkinson (1996: p. 26) as *“the process of assigning tags or labels to the data, based on the researcher’s concepts and simply it is a way of condensing the bulk of data sets into analysable units by creating categories with and from data”*. Weber (1990) describes a category as a group of words with similar meaning or connotations.

Codes and categories can be developed at three stages within the research process: before, during and after data collection. Accordingly, they can be developed by means of identifying relevant concepts/themes from the literature review, the researcher’s own experiences within the study and further through subjective data collected from the free-flowing text (or relevant data collection techniques) (Ryan and Bernard, 2003; Hsieh and Shannon, 2005). It is therefore a matter of choosing the most appropriate coding method as there are two approaches to coding data that operate with slightly different rules; while Stemler (2001) describes them as priori and emergent coding, Krippendorff (2004) uses the

terms deductive and inductive coding, to mean the same. In priori/deductive coding, the categories are established prior to the analysis based upon some theory and once categories are agreed upon, the coding is applied to the data. In emergent/inductive coding, the categories are established as they emerge from the free-flowing text itself. Although emergent/inductive coding is an approach closely related to grounded theory, both priori/deductive and emergent/inductive approaches are useful in case study interview data analysis. In this context, this research uses both approaches.

Hahn (2008) describes the coding as a four staged process: level 1 (initial coding, open coding); level 2 (focused coding, category development); axial/thematic coding; and level 4 (theoretical concepts) as depicted in Figure 3-10.

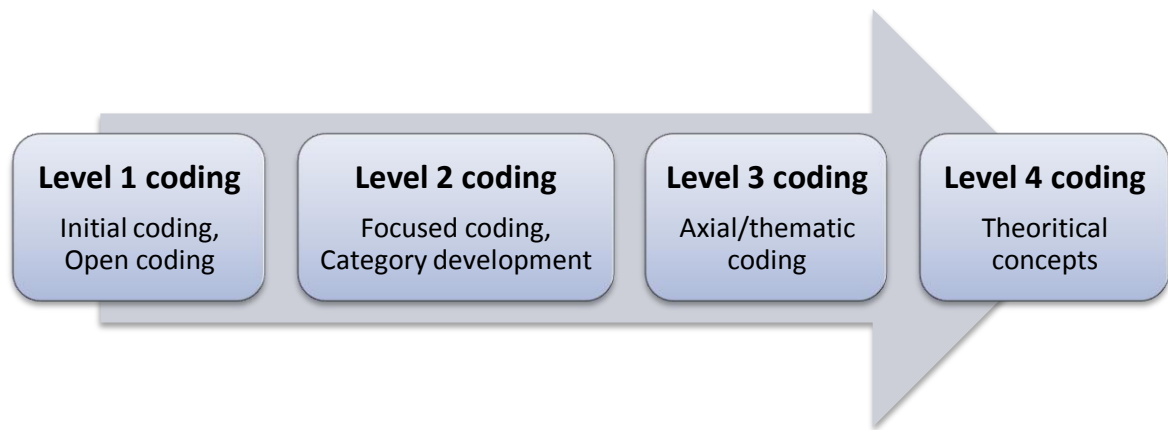


Figure 3-10: Coding process
(Source: Hahn, 2008)

Initial coding takes place with open coding when the interview data are transcribed and put in the text format in which codes are identified without any restrictions to discover importance of meanings (Hahn, 2008). Open coding continues until theoretical saturation is achieved where no new codes or categories are being identified. Thereafter, open coding leads to the next stage in which the previously established codes are further examined by referring back to data (Hahn, 2008). This enables discovery of categories. Once the categories are developed, the next step, called axial/thematic coding, takes place in which the strong focus is placed on discovering codes around a single category. Without being restricted to this function, axial coding can also be used to develop categories and identify relationships between categories.

Due to the difficulties in handling the content analysis process manually, the researcher had to rely on an appropriate computer software package that would support the researcher's intellectual efforts and enable the content analysis process to run smoothly. Regardless of the nature of software packages, the success and the strength of the analysis still owe much to the judgement and the skills of the researcher. NVivo (version 8) was used in this research in order to facilitate this coding and content analysis process.

After importing the interview transcripts into the NVivo software, they were thoroughly investigated to discover the main concepts related to the study. Both inductive and deductive approaches were employed in identifying the concepts and thus the literature review, data on interview transcripts, and the researcher's own experiences with the study were of immense use in identifying the concepts. While going through this process, a code list was developed. These codes were then assigned to each concept as and when they were identified from the transcripts.

The analysis was further iterated thoroughly where the initial concepts were modified to be more appropriate, adding new concepts as they appeared more relevant. These iterations continued until no new relevant nodes were identified. At the same time, free-flowing data were further examined and broken down into content categories which are related to a particular concept. NVivo software has two types of '*nodes*' called free nodes and tree nodes. The term 'node' is used in NVivo to represent the identified concepts. The codes created from the above process were listed as free nodes where free nodes appear in a flat structure within NVivo. Later, the free nodes were then arranged in a hierarchical manner and converted into tree nodes, which corresponded to the key elements identified in the initial and refined conceptual models (during the expert interviews and case study interviews respectively).

After developing the tree nodes as described above, the coded texts were further analysed by refining the relationships between nodes. This process was facilitated by the cognitive mapping technique which is described below.

3.5.2.2 *Cognitive mapping*

Cognitive mapping is a technique for seeking out connectivity between events, ideas or arguments (Brightman *et al.*, 1999). Eden and Ackermann (1998) identify it as a tool which can be used to structure messy or complex data. The structure of cognitive mapping eases decision making, reasoning, arriving at judgments, and making predictions about future events (Daniels and Henry, 1998). By using cognitive mapping, the issues/ideas can be structured into a hierarchical network. Thereafter, the relationships surrounding and supporting information behind the issues/ideas can be exploited and can be made explicit. Thus, the cognitive mapping technique can be used to bridge the gap between raw data and theory building. In this research, the process of developing cognitive maps was facilitated by a computer software package, namely Inspiration (version 8). This was used mainly to represent the themes and concepts identified through the content analysis process.

Inspiration software helps to organise the opinions of the interviewees and identify the relationships between them. Accordingly, the opinions of the respondents can be entered in the form of ‘concepts’ and different concepts can be linked to show their relationships and interdependencies. In this research, initially the coding structure that was developed with NVivo (the tree structure) was imported into the Inspiration software to create the basic hierarchy. Then the codes within the basic cognitive map were supported with the concepts extracted from the interviews transcripts. The concepts were entered in the form of short phrases and relationships were created between the concepts and codes to make explicit surrounding and supporting information.

Throughout this chapter, effort was taken to explain the philosophical assumptions, research approach and research techniques adopted in this study. The next section provides further details of various tactics applied to ensure the quality of the research.

3.6 Research validation

Lincoln and Guba (Lincoln *et al.*, 2011) highlight apparent avoidance of ‘critical scrutiny’ as one of the key criticisms of qualitative approaches. Qualitative research has received criticism with reference to its validity, due to the absence of standardised and universally

accepted validation criteria (Kvale, 1996; Morse, 1999; Robson, 2002). However, as the nature of the phenomenon being investigated has a bearing on its philosophical position it can be questioned whether studies conducted within different philosophical traditions should adopt the traditional validation criteria used in positivist studies (Gioia and Pitre, 1990; Love *et al.*, 1993; Healy and Perry, 2000). Despite this argument, it is important to establish issues such as reliability and validity of research during a research study regardless of whatever philosophical stand point the researcher believes (Easterby-Smith *et al.*, 2008). Regardless of the researcher's heavy involvement in the research, qualitative researchers must make an effort to establish the reliability and credibility of results in order to make an impression on the reader (Silverman, 2001).

Regardless of popularity of case study method as a distinct form of empirical inquiry, it has been criticised by the research community as a less desirable form of inquiry than other research approaches (Yin, 2009). In order to overcome such criticisms, the development of the case study design needs to be maximised for conditions related to design quality, namely (i) construct validity, (ii) internal validity, (iii) external validity and (iv) reliability (Yin, 2009).

Construct validity is concerned with establishing correct operational measures for the concepts being studied (Miles and Huberman, 1994; Yin, 2009). Specifically, this measure is largely based on whether the data collection instrumentation was appropriate for the research. In this research, construct validity was achieved by triangulation of research techniques. In addition to the triangulation attained using multiple sources of data as explained within Section 3.5.1, triangulation by theories was achieved when conducting the literature review, through the integration of different streams of literature. Furthermore, maintaining a chain of evidence throughout the research improved the construct validity.

The internal validity has to be established at the data analysis stage by ensuring that data analysis techniques were applied correctly and the theoretical propositions were appropriately linked to the data during data analysis. Thus, establishing internal validity involves *“establishing a causal relationship, whereby certain conditions are believed to lead to other conditions, as distinct from spurious relationship”* (Yin, 2009: p. 40).

Internal validity was addressed in this research in several ways. First, the careful choice of research design enabled the choice of an appropriate research approach and techniques based on the nested model. Second, by providing research objectives and theoretical frameworks for this study and by developing them progressively during the literature review, the research direction and focus were achieved.

The external validity indicates the extent to which research findings can be generalised and establishes the domain to which a study's findings can be generalised. Using replication logic in the multiple case studies satisfies this external validity. Yin (2009) emphasises that case studies are generalisable to theoretical propositions but not to populations or universe: case studies lead to analytical generalisation rather than statistical generalisation. In multiple case studies, if two or more cases support the same theory, replication may be claimed and thereby 'cross-case generalisation' can be achieved. In this context, this research relied on analytical generalisation over statistical generalisation as case studies do. The findings of this study can therefore be generalised to the case study population and further, the use of multiple case studies facilitates cross-case generalisation and thus enable generalising of the findings to the context.

Reliability was also established during the data collection phase of this research. Reliability means "*demonstrating that the operations of study, such as data collection procedures can be repeated, with the same results*" (Yin, 2009: p.40). Within the scope of this research, operations were carried out as detailed in the Section 3.4.1, ensuring transparency and enhancing reliability. During the case study phase, with the assistance of the NVivo software, case study protocol and case study database were maintained. Using case study protocol, explanation about every step followed during the data collection and all material used during data collection was recorded. The case study database was used to organise and document the data collected for case studies.

3.7 Summary and link

This chapter presented and justified the research methodology adhered to during the PhD research process. In doing so, how the research philosophy, approach and techniques were positioned to address the research problem of the study was discussed within this chapter.

This study adopts the social constructionism view in terms of its philosophical assumptions and the case study approach was selected as the main research approach. The data was collected through semi-structured interviews from 20 experts within the construction partnering field and within the two selected case studies. These interviews were analysed using two qualitative data analysis techniques called content analysis and cognitive mapping. The chapter concluded with a discussion on the validation of this study. The next chapter presents the empirical data analysis and synthesis of cultural and behavioural challenges within construction partnering projects.

CHAPTER 4 DATA ANALYSIS: CULTURAL AND BEHAVIOURAL CHALLENGES

4.1 Introduction

This chapter aims to present a systematic review of cultural and behavioural challenges in construction partnering projects, as well as the analysis from survey interviews with academic and industrial experts. Firstly, it sets out the dilemma for those seeking to achieve cultural transformation and considers two schools of thought to study implementation challenges associated with construction partnering. This is followed by a systematic review of the literature to understand and identify cultural and behavioural challenges. A synthesis of the literature is used to form eight major categories of cultural and behavioural challenges. A detailed analysis was conducted with appropriate references taken from coded data via NVivo software. This was used as the basis for the development of an interview protocol to be used for the collection of expert opinion.

Secondly, the results from the content analysis of experts' opinion are presented. Separate analyses on academic and industry experts were conducted initially to identify the perceived root causes of cultural and behavioural challenges. This was represented in the form of a cultural web diagram, and categorised into rituals and routines, stories, symbols, power, structure and control system related challenges in construction partnering projects. These findings were consolidated and presented in Chapter 6 as the cultural and behavioural root causes in construction partnering projects.

4.2 Data analysis – Systematic review method

4.2.1 Construction partnering dilemma

Partnering and the related forms of collaboration have been seen as a way of tackling fragmentation and lack of integration, that have bedevilled attempts to improve project performance over the years (Bresnen and Marshall, 2000d). These arrangements aim to increase cooperation and integration between the participants by building trust and commitment, whilst decreasing disputes (Eriksson *et al.*, 2008). This requires a

‘paradigm shift’ (Larson and Drexler, 1997), and a fundamental change of behaviour and attitudes from all participants involved (Kululanga and McCaffer, 1999; Eriksson *et al.*, 2008). Bringing about this fundamental change is not easy while operating in the same environment. Hence, there has been considerable debate around partnering as a vehicle for change and the conditions that encourage or hinder such collaboration (Cox and Ireland, 2002).

Consequently, several studies emerged to investigate the challenges associated with construction partnering projects. While some authors considered the failure in the philosophy of partnering (Green, 1999; Bresnen and Marshall, 2000d; Cox and Ireland, 2002) others examined the implementation challenges (Ng *et al.*, 2002b; Chan *et al.*, 2003c; Eriksson *et al.*, 2008). The construction industry of the UK has taken steps and strides in the last century towards collaborative contracts. As early as 1964, the ‘Banwell Committee’ report promoted integrated construction benefits in a culturally torn industry (Griffith *et al.*, 2003). Many other proposals were also laid-out over the years to increase collaboration. These reports have exposed that the construction industry should try to look into internal processes and take remedial action to change to an integrating culture, rather than continuously altering procurement methods to radicalise integration. Furthermore, increasing awareness of partnering implementation will allow participants to appreciate the kinds of challenges faced and, thus, how procedures and protocols might be modified to overcome them. This suggests a need to examine the implementation challenges in changing culture and the behaviour of stakeholders in the UK construction industry. This is further strengthened by considering partnering as a management strategy to bring about an integrated culture. For this purpose, a literature synthesis on construction partnering was initially undertaken to identify implementation challenges in construction partnering projects.

4.2.2 Systematic review method

The construction industry requires rigorous practice and relevant research because both requirements are of crucial importance. As discussed in Chapter 3 (refer to Section 3.5.1.1), a ‘Pragmatic Science’ research approach is very relevant to the construction industry. In order to fully understand the prior research in this field and to identify

major cultural and behavioural challenges, a systematic literature review (Tranfield *et al.*, 2003) was undertaken.

4.2.2.1 Searching

The first stage of the systematic review process involves the identification of research papers and research reports that were broadly concerned with construction partnering challenges. After an initial survey of general partnering related articles and given references, appropriate electronic databases and websites were selected for this purpose. Potentially relevant papers were identified using these sources, using a predetermined search strategy. Table 4-1 provides databases that were searched for this purpose:

Table 4-1: Article databases

Database	Areas
Business Source Premier EBSCO	This database is the world's largest full text database for scholarly business journal and peer-reviewed publications, including virtually all subject areas related to business
Compendex (Engineering Village)	Compendex is the most comprehensive bibliographic database of scientific and technical engineering research available, covering all engineering disciplines and 120 years of core engineering literature.
Emerald Management	Emerald publishes the world's widest range of business and management journals allowing access to the latest research and global thinking
General Business File International (Gale)	Gale database comprises of company performance and activity analyses, industry events and trends as well as the latest in management, economics and politics providing access to a combination of broker research reports, trade publications, newspapers, journals and directory listings with full text.
Ingenta Connect	Ingenta connect is a comprehensive multi-disciplinary document delivery service providing access to thousands of online journals from leading scholarly, academic and business publishers. Full-text is available for all core Blackwell science and medical journals.
Management & Organisation Studies (CSA)	Contains journal articles covering organisations studies, management, business, human resource, marketing, public policy, public administration and industrial relations.
Science Direct (Elsevier)	ScienceDirect contains over 25% of the world's science, technology and medicine full text and bibliographic information. Search can be conducted over 60 million abstracts from scientific articles; and link out to articles from over 170 other publishers.
SwetsWise	SwetsWise offers a single point of access to a large and growing range of full text publications as well as table of contents and abstracts.

4.2.2.1.1 Development of search strategy

A search strategy was developed to ensure that all the searches undertaken were consistent and comparable. In order to assess the relevance and size of the literature, the scope of the literature review process was delimited by factors of disciplinary perspective, keywords and quality of the research sources. An initial search with all the combined keywords, only in ‘Emerald Management Xtra’ database resulted in over 20,000 articles. These were conducted by forming search strings with the combination of three keywords, each from a keyword column (Table 4-2) and searching in the ‘full text’ field. Hence, to manage the size of the study, the search was then restricted only to cover abstracts or the ‘title/ keywords/ abstract’ field.

Table 4-2: Keywords and search strings

Keyword 1	Keyword 2	Keyword 3
	Alliance	
	Partnering	
	Partnership	Failure
	PFI	Problem
	PPP	Issue
Construction	Supply chain	Barrier
	Relational contract	Challenge
	Collaborative contract	Concern
	Framework contract	Critical success factors
	Capital contract	
	Prime contract	

Keywords were derived from the initial literature survey and informal communications with experts from various conferences. While keyword 1 keeps the focus on the construction industry related articles, Keyword 2 explores terms used for partnering related approaches around the world. Besides, pairing of keyword 3 presented instances where partnering challenges in the construction industry was mentioned in the abstract. These combinations gave 77 individual search strings and 626 search occurrences. However, most of the databases used in this study supported Boolean logic and advance

search options which ensured an effective search within the time frame. Appendix B lists all the searches with Boolean logic and connectors.

Example: Search on Science Direct

(((construction) WN AB) AND (({partnering} OR partnership OR {supply chain} OR {relational contract} OR {relational contracts} OR {collaborative contract} OR {collaborative contracts} OR {framework contract} OR {framework contracts} OR PFI OR PPP OR {capital contract} OR {capital contracts} OR alliance OR {prime contract} OR {prime contracts}) WN AB)) AND ((problem or issue or barrier or challenge or concern or {critical success factors} or failure) WN AB)), English only , 1990-2008

Since each database has its own Boolean connectors, separate advance search commands were written. Also, appropriate truncations, wildcards and operators were applied to enhance this search strategy. However, some of the databases restricted the search to a few keywords due to engine load capacity and the number of characters in a field. In this case, searches were conducted in chunks and added to the list of bibliographies. The reference manager ‘EndNote X1’ was used to capture this bibliographic information. Separate EndNote libraries were maintained for each database search to check and update for a future date. This search was conducted in early 2008 to inform the questionnaire designed for interview data collection. Table 4-3 presents search results.

Table 4-3: Search results

Database	Search results
EBSCO	631
Engineering Village	558
Emerald	102
Gale	51
Ingenta Connect	63
CSA	0
Science Direct	77
SwetsWise	199
Total	1681

4.2.2.2 Screening

Screening of relevant articles was executed in order to ascertain whether the documents were likely to meet pre-determined inclusion and exclusion criteria. These criteria were derived from concepts inherent in the second research objective and related issues.

Inclusion criteria

1. Published papers/articles since 1990; the main contribution to partnering literature were published after 1990.
2. Papers/articles in English language
3. Papers/articles that specifically address problems and challenges in construction partnering
4. Papers/articles with empirical and non-empirical evidence
5. Papers/articles published around the world
6. Scholarly and non-scholarly papers/articles

Exclusion criteria

1. Published papers/articles before 1990
2. Papers/articles not written in English language
3. Papers/articles that do not address problems and challenges in construction partnering
4. Papers/articles with published in news papers

Most of the databases were equipped with a ‘time limit’ function and therefore criterion 1 to restrict articles after 1990 was addressed while performing the search. However, some databases do not have the option to limit the search for articles published in the English language and this screening was performed during the review by title and abstract. Imported results from each database were then combined to a master file. This master file, containing 1681 references, was then screened for duplicates using the automated reference manager facility, leaving a database with 1507 references. However, there were minor differences in the way each database records their articles, especially in terms of authors’ name and article title. Subsequently, additional duplicates were manually identified and removed from the master file by using the

author’s name and year of publication. The removal of duplicate references reduced the number of potential studies for inclusion in the in-depth review to 1,428.

Table 4-4: Search results, fully reviewed papers, and included papers

	Search results	
Initial search		1681
Automated duplicate removal	(174)	1507
Manual duplicate removal	(79)	1428
Title screening	(1177)	288 37
Abstract screening	(249)	39
Intended for full review		76
Unable to obtain		(8)
Full text screening	(36)	69
Final in-depth review		33

Note: Appendix C provides the list of studies undertaken for full paper review.

After the duplicates were removed, identified articles were screened by title and abstract. Since some of the keywords were commonly used in other sectors, a quick scan of article titles reduced the number of studies required for in-depth review. Here, relevant articles were categorised into two main groups of ‘articles for abstract review’ and ‘articles for full paper review’. 288 ‘articles for abstract review’ and 37 ‘articles for full review’ were found at this stage. An abstract review of those 288 articles in accordance with inclusion/exclusion criterion 3 ended in 40 ‘articles for full review’. Hence, full texts of these 76 ‘articles for full review’ were required for the study. However, only 69 full texts were obtained during this process. This is due to the problem of accessibility to non-journal articles and conference papers. These 69 full texts were reviewed and 33 papers were included for the in-depth analysis. Table 4-4 summarises the searching and screening process.

4.2.2.3 Data extraction

The data extraction phase of this review was entirely carried-out using content analysis software NVivo 8. Unlike earlier versions, NVivo 8 supports the import of *.pdf files.

However, there were 6 articles which were obtained in pdf image format. 4 of these articles were then acquired in HTML format and text was copied to the NVivo 8 software. Important paragraphs were typed for the balance 2 articles.

As each article was imported as sources, a case book was opened for these articles. Three attributes were used in this case book to record details of the article: type of evidence, location of participant population and year of study. The following definitions were used to define the type and weight of evidence.

1. Anecdotal evidence: Usually very weak 'positive' evidence; describing one or a small number of specific instances, presumably of the same type, general nature, or structure (Seech, 2003).
2. Analogical evidence: Fairly strong or supportive evidence, explaining logic behind the target phenomenon by means of a comparison with an already understood, or more easily understood, phenomenon (Seech, 2003)
3. Empirical evidence: Strong evidence supported with research methodology and academic rigour; they are sub-categorised into evidence from workshop, ethnographical study, case study, survey interview and statistical survey.

Here, the data extraction stage was used merely as a collection point of sources and information regarding the relevant articles.

4.2.2.4 Synthesis

From the systematic review of literature, using the key word search, 33 articles were identified for in-depth study and content analysis.

Table 4-5 summarises details of articles included for content analysis. Because of the support to the partnering concept by the government, NHS related studies and the amount of money spend on partnering projects, the UK leads in the number of partnering related studies. Also, its increasing concerns have motivated investigations into partnering challenges, especially after 2000. Out of 33 studies, 30 of them were produced after the start of this millennium.

Table 4-5: Summary of articles included for content analysis

Type of evidence	Number of studies	Location of participant population
Empirical evidence		
Ethnography	1	UK
Case study	5	UK
Workshop	1	UK
Survey interview	4	3 UK, 1 Australia
Statistical survey	8	4 UK, 2 HK, 2 Sweden
Analogical evidence	4	Not applicable
Anecdotal evidence	10	Not applicable

4.2.3 Discussion: cultural and behavioural challenges in construction partnering projects

Cultural and behavioural challenges in construction partnering projects were identified from an in-depth review of systematically obtained articles. Challenges in the implementation stage of construction partnering projects were looked at from a cultural perspective and those associated with/to organisational soft issues were coded in NVivo. Content analysis on the selected studies resulted in 48 free nodes, which were then categorised under eight parent nodes. While five of the free nodes were merged into parent nodes, another three parent nodes emerged from the balance of free nodes. However, due to the difference in logical reasoning provided by authors, three of the other free nodes were duplicated. The following are the eight categories derived from content analysis of the articles acquired by systematic review process.

1. Improper sharing of risk and rewards
2. Inefficient problem solving and continuous improvement
3. Lack of commitment
4. Lack of continuous and open communication
5. Mistrust
6. Poor understanding of partnering concept
7. Reluctance to change to an integrating culture
8. Win-lose attitude

Based on the coded data, further associated links were formed and modelled into cognitive representations. A detailed description of the coding techniques using NVivo is provided in the research methodology chapter. However, unlike interview transcripts, explanations regarding the challenges in selected articles were short and restricted to analogical descriptions. Hence, limited explanatory links are incorporated in the cognitive representations. Figure 4-1 shows parent and child nodes models from content analysis. Explanatory links and references are provided in Sections 4.2.3.1 to 4.2.3.8.

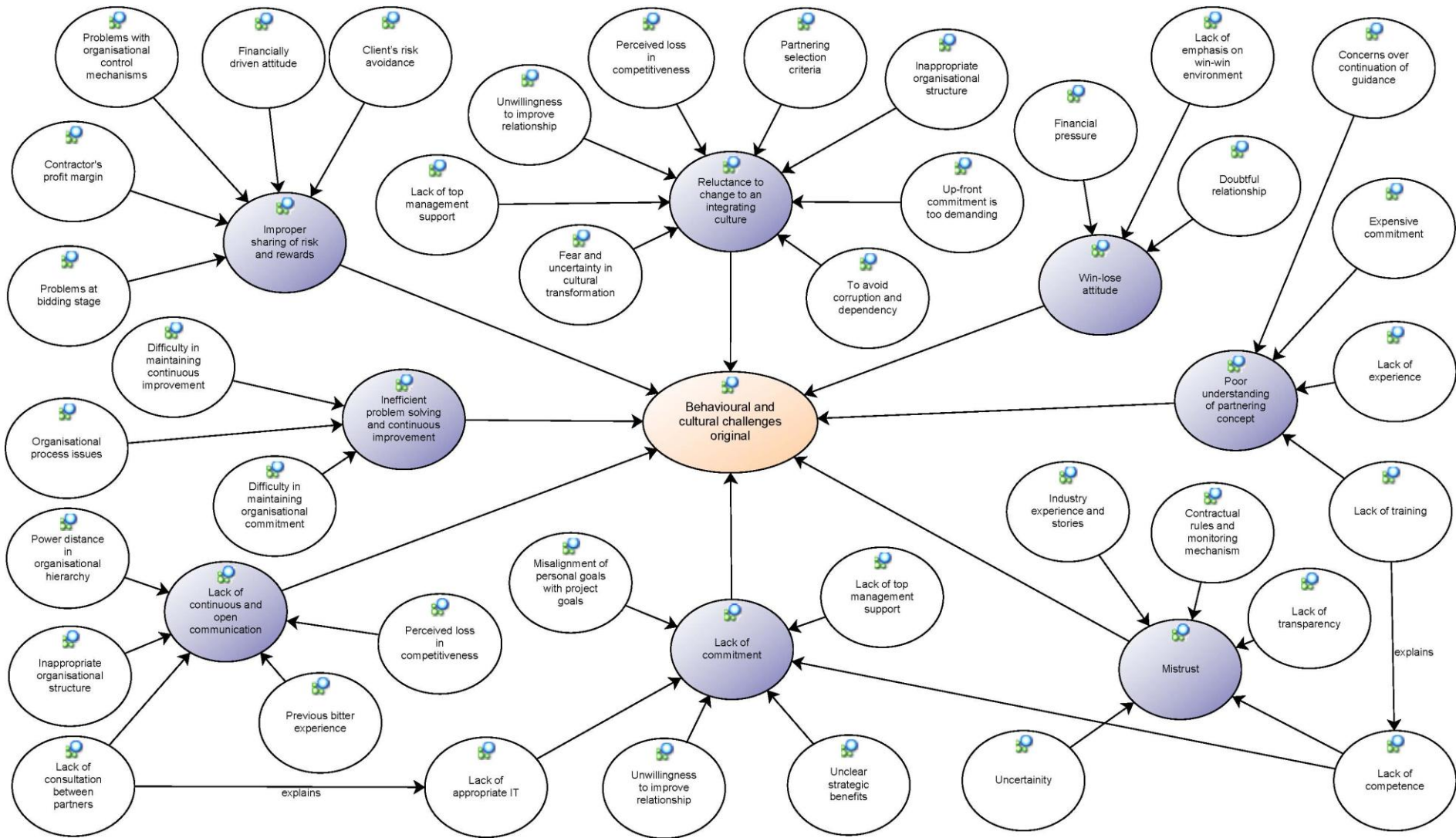


Figure 4-1: Cultural and behavioural challenges in construction partnering projects

Each category of cultural and behavioural challenges in construction partnering is illustrated below separately.

4.2.3.1 *Improper sharing of risk and rewards*

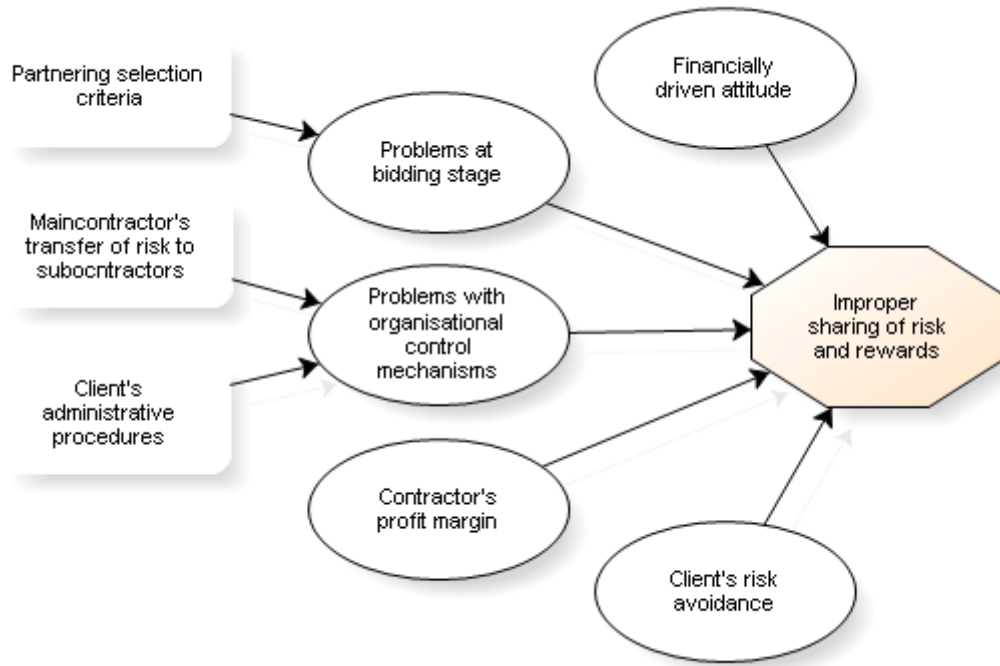


Figure 4-2: Cognitive representation of issues related to improper sharing of risk and rewards

Partnering is said to increase collaboration and proposed as a means to appropriately share risk and rewards. However, some participants do not recognise the requirement for compromise during risk transfer (Grimsey and Graham, 1997; Dixon and Pottinger, 2006) and ‘team approach’ (Ng *et al.*, 2002b). Chan *et al.* (2006) went on to state “*they try to take full advantage of the partnering spirit to reduce their own risk and as a result may be unwilling to share the risk*”. Concerns over contractor’s profit margin (Carrillo *et al.*, 2006), financially driven attitude (Grimsey and Graham, 1997; Beach *et al.*, 2005), client’s risk avoidance (Bresnen and Marshall, 2000d; Blyth, 2003; Dey and Ogunlana, 2004) and problems at the bidding stage (Akintoye *et al.*, 1998; Dainty *et al.*, 2001a; Akintoye *et al.*, 2003) could further disintegrate a team approach and lead to improper sharing of risks and rewards. A ‘buyer’s market’ may enable powerful clients to transfer risks onto contractors and press more effectively for changes in their methods of operation (Bresnen and Marshall, 2000d).

Ng *et al.* (2002b) point out that unwillingness to compromise the client's financially detrimental administrative procedures can also lead to stakeholders' mistrust. These administrative procedures (Payne, 1997) may not allow stakeholders to share risks appropriately and act as a hurdle to innovation and continuous improvement, as reported in several PFI projects (Dixon *et al.*, 2005). In spite of subcontractors' share of work, main contractors remain relatively unsophisticated in their approach to them (Briscoe *et al.*, 2001; Trask and Jamieson, 2004; Bresnen, 2007). These relationships are more often strained by conflict and mistrust, enabling the main contractor to apportion risk to subcontractor (Bresnen and Marshall, 2000d; Eriksson *et al.*, 2008). Bresnen (2007) also points out that, even in a number of exemplary partnering projects, there were still problems in agreeing satisfactory formulae for sharing of profits and risks.

4.2.3.2 Inefficient problem solving and continuous improvement

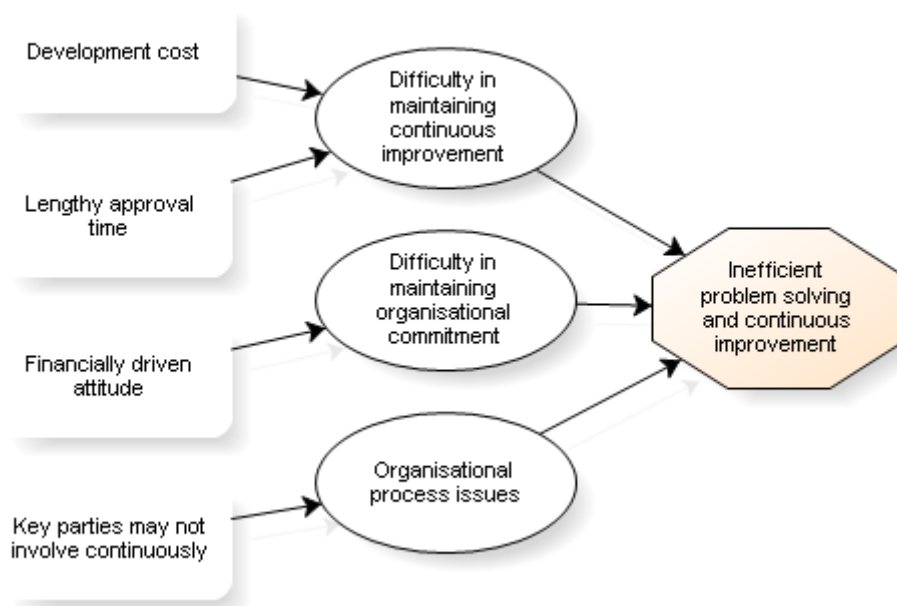


Figure 4-3: Cognitive representation of issues related to inefficient problem solving and continuous improvement

Even though inefficient problem solving and continuous improvement are organisational issues, they are also exhibited due to the misplacement of cultural elements such as attitudes, values and shared assumptions. Traditional responsibility for continuous improvement rests with contractors (Chan *et al.*, 2003c) and partnering is said to eliminate waste and barriers by joint effort (Brown, 1994). This requires change in the trading

philosophy and improvement in the organisational process to bring all parties to the partnering contract; such as key subcontractors, design consultants, and suppliers together with clients and contractors which in turn could improve trust between parties (Love, 1997). This could be obstructed by lengthy approval time and development costs in maintaining continuous improvement efforts (Chan *et al.*, 2003c).

Ng *et al.* (2002b) found from the case studies that a financially driven attitude, and the lack of commitment to the implementation of the procedures of partnering are some of the original reasons for not resolving problems at the lowest possible level. Hence, issues and problems are allowed to slide and escalate in the partnering process, and it is vital for partnering teams to continuously identify, confront, and resolve problems (Eriksson *et al.*, 2008).

4.2.3.3 Lack of commitment

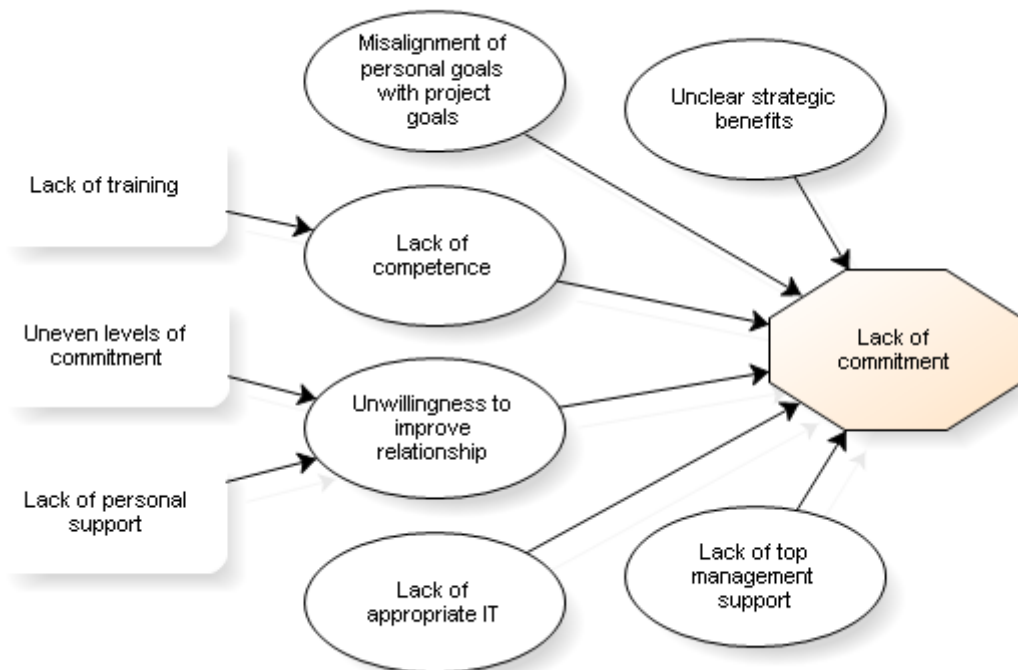


Figure 4-4: Cognitive representation of issues related to lack of commitment

A lack of commitment to project partnering for the full duration of the project can lead to a breakdown of the partnering arrangements (Akintoye *et al.*, 2000; Bubshait, 2001; Ng *et al.*, 2002b). Hence, it is important for every stakeholder to commit to project partnering

and be willing to support all other stakeholders (Larson, 1997). This means overcoming the perceived risk of trust which requires actual commitment rather than lip service (Chan *et al.*, 2003c). However, lack of top management support (Hellard, 1996; Ng *et al.*, 2002b; Akintoye and Main, 2007), lack of competence (Akintoye *et al.*, 2003; Carrillo *et al.*, 2006; Eriksson *et al.*, 2008), unclear strategic benefits (Li *et al.*, 2005; Bresnen, 2007), lack of appropriate IT (Akintoye *et al.*, 2000), unwillingness to improve relationships and misalignment of personal goals (Cicmil and Marshall, 2005) with project goals can also contribute to this challenge. Uneven levels of commitment because of differing goals among parties (Chan *et al.*, 2003c) and lack of personal support can lead to unwillingness of parties to improve relationships and integrate to a collaborative culture. This could cause misunderstanding and intractable conflicts.

4.2.3.4 Lack of continuous and open communication

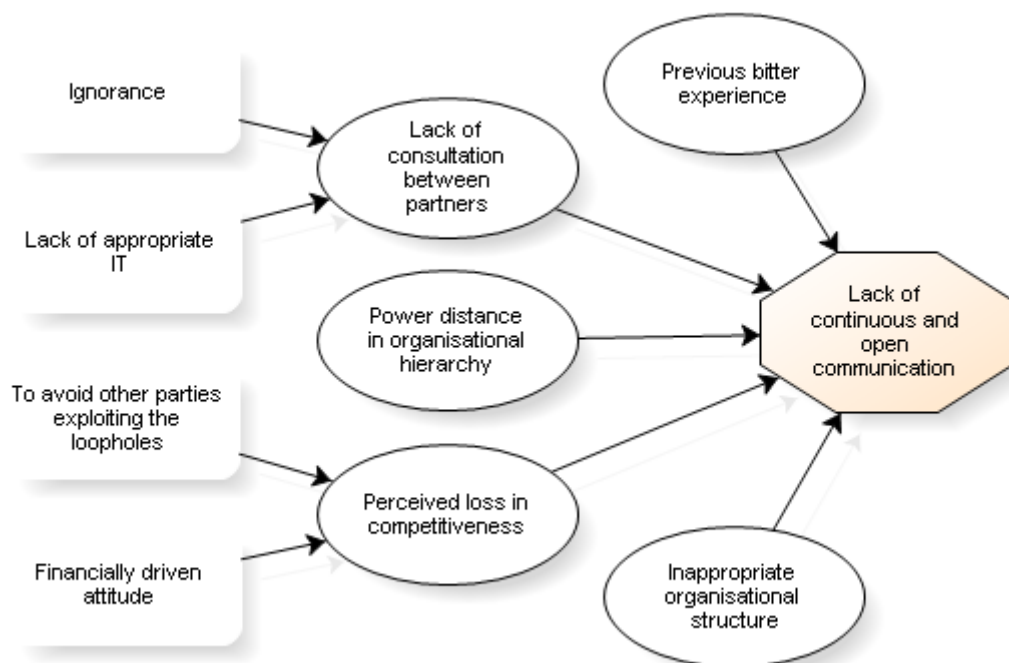


Figure 4-5: Cognitive representation of issues related to lack of continuous and open communication

Ng *et al.* (2002b) suggests that failure to achieve open and honest communication is due to the adoption of a win–lose attitude. A win-lose attitude in this instance mainly refers to perceived loss of competitiveness which is formed by a financially driven attitude (Bresnen and Marshall, 2000d) and a feeling of insecurity to avoid other parties exploiting

the loopholes (Briscoe *et al.*, 2001). Alternatively, failure to hold shared assumptions because of previous bitter experience could create a win-lose attitude.

Sometimes communication fails and results in less collaboration and consultation (Akintoye and Main, 2007) through ignorance (Gardiner and Simmons, 1998). Lack of appropriate information technology could also result in poor collaboration by obstructing transfer of important and accurate project information between parties (Dainty *et al.*, 2001a; Bresnen, 2007). Power distance (Bresnen and Marshall, 2000a; Koutsikouri *et al.*, 2008) and inappropriate organisational hierarchy (Cheng and Li, 2000; Bresnen and Marshall, 2002; Koraltan and Dikbas, 2002) can influence communication, especially in a large project with a multilayered management structure. These reasons may lead to degradation in the stakeholders' ability to efficiently resolve any problems.

4.2.3.5 *Mistrust*

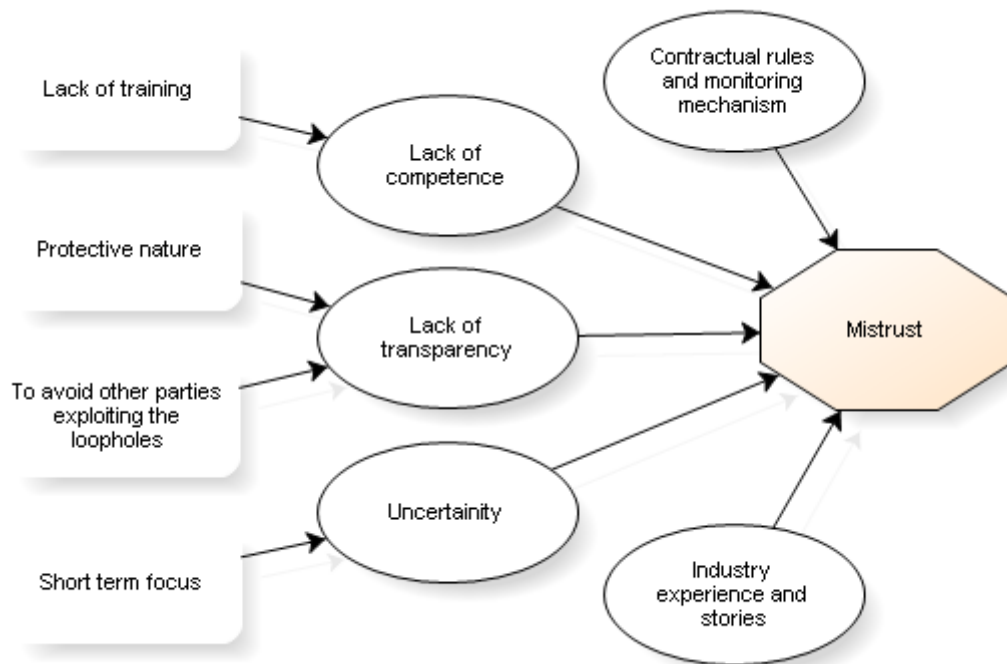


Figure 4-6: Cognitive representation of issues related to mistrust

Mistrust is long seen as a typical industry culture which emerges from a fragmented structure and adversarial nature of the construction industry. Eriksson and Laan (2007) point out that relevant competence and appropriate exchange of competence between the parties enhances trust, and so these characteristics are seen as positive for building

cooperative relationships. Especially in the case of clients, relationships become strained if the actors have low confidence in the ability to manage the project with sufficient technical (Grimsey and Graham, 1997; Jones and Kaluarachchi, 2007) and managerial competences (Ng *et al.*, 2002b; Cheung *et al.*, 2003a; Dixon *et al.*, 2005; Carrillo *et al.*, 2006).

Unfortunately, a project environment conducive to trust can also be affected by industry experience and stories (Akintoye and Main, 2007), contractual rules and monitoring mechanisms (Cheung *et al.*, 2003a; Bresnen, 2007) and lack of transparency due to concerns in data protection (Glagola and Sheedy, 2002) and to avoid other parties exploiting the loopholes. This is also a hurdle to implementing more progressive approaches (Chan *et al.*, 2003c). Ng *et al.* (2002b) point out that “*The client was unwilling to forgo their unnecessary ‘red tape’ to benefit the contract, which ultimately led to mistrust between stakeholders in the relationship*”. The predicament here is between the desire for trust and inclination towards the implementation of control systems. According to Dainty *et al.* (2001a), “*partnering arrangements still retained quasi-competitive methods of control which leads to the maintenance of mistrust and conflict between main contractors and client organisations*”.

In short term project settings, there is often limited opportunity for the development of deeper, more resilient forms of trust (Bresnen, 2007). A short term focus could lead to uncertainty and eventually mistrust. Mistrust is easily formed due to problems in projects; hence contributes greatly to cultural and behavioural challenges. For instance, when information that project participants are expected to act on is incomplete, biased or wrong, trust is always at risk because defensive responses are triggered (Cheung *et al.*, 2003a).

4.2.3.6 Poor understanding of partnering concept

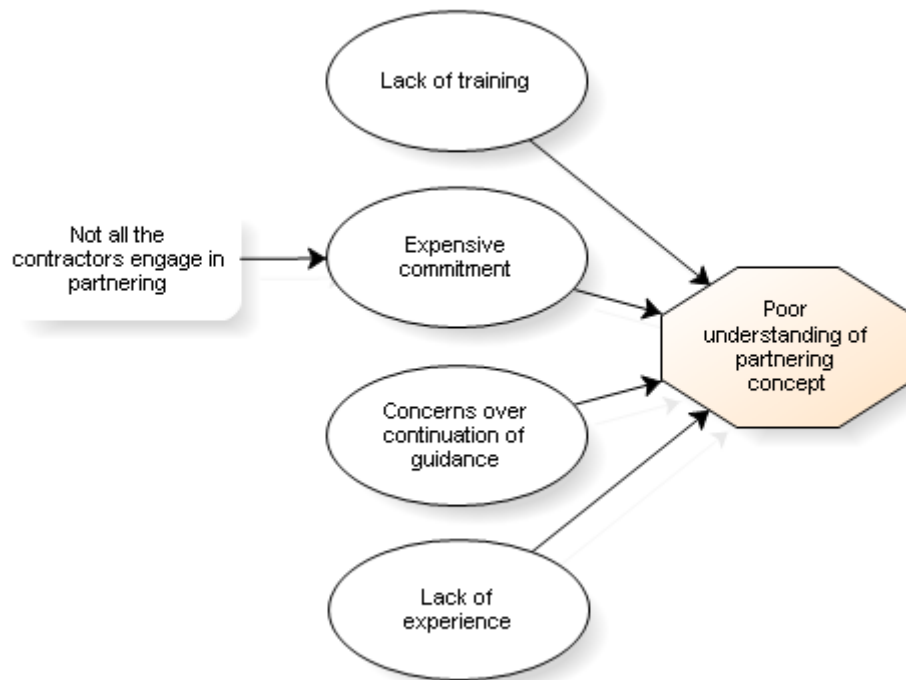


Figure 4-7: Cognitive representation of issues related to poor understanding of partnering concept

Various authors point out the lack of understanding of the partnering concept and its elements as one of the challenges in implementing partnering (Akintoye *et al.*, 2000). This behaviour not only affects the culture within the project but also stimulates a negative picture of the partnering concept. Chan *et al.* report (2003c) that some project participants failed to understand how the partnering relationship could provide a competitive advantage and the concept of fair profit motive. Inadequate training of staff (Briscoe *et al.*, 2001) or expertise of the facilitators could also be a crucial obstacle for implementing partnering. Furthermore, limited experience in the partnering approach can affect the understanding and knowledge of project participants (Larson and Drexler, 1997; Jones and Kaluarachchi, 2007). Not all the small contracts necessarily engage in partnering projects (Dainty *et al.*, 2001a) and it would be an expensive commitment for them to understand and initiate.

4.2.3.7 Reluctance to change to an integrating culture

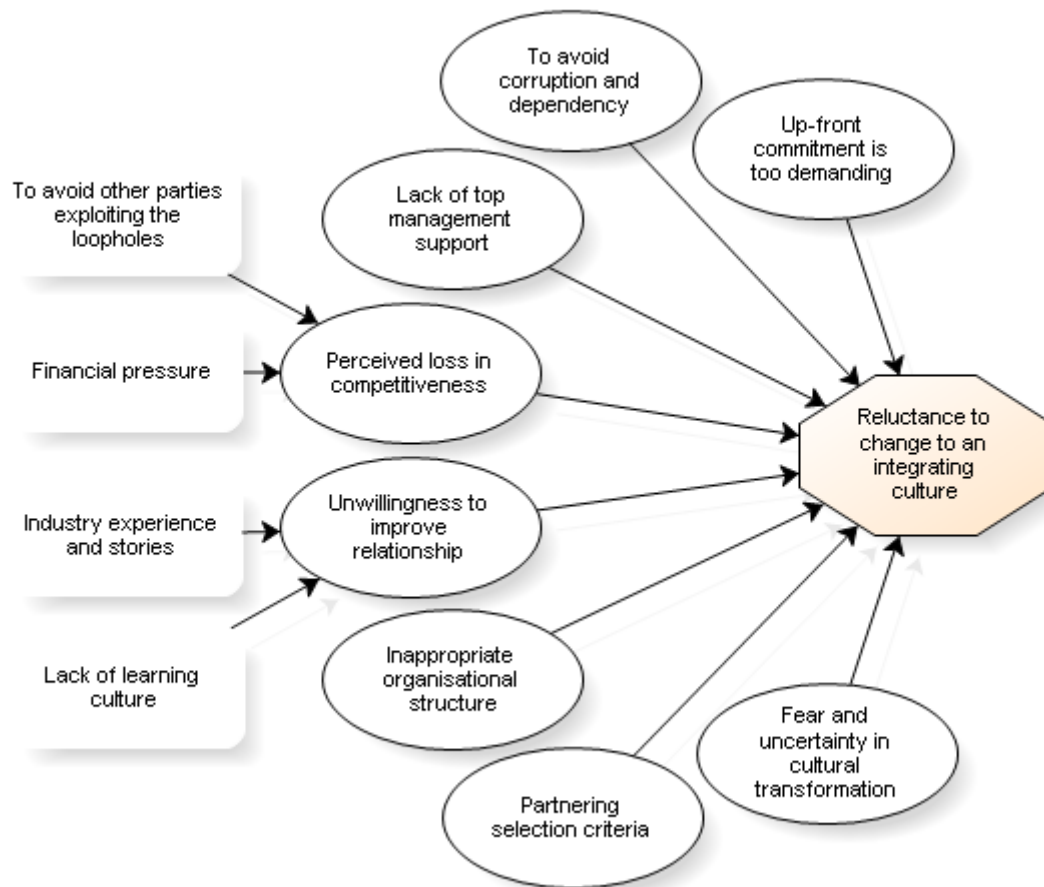


Figure 4-8: Cognitive representation of issues related to reluctance to change to an integrating culture

The fundamental promise of partnering is to eliminate the adversarial nature of the construction industry, thus creating an integrating culture and a collaborative environment. However, people who win at the expense of others are very difficult to engage into proper cooperation and collaborative thinking (Chan *et al.*, 2003c). Changing to an integrating culture is perceived to be a very difficult task (Bresnen, 2007) since existing values and beliefs are considered by many as ‘not open for questioning’ (Eriksson *et al.*, 2008). This results in a poor learning culture (Kululanga and McCaffer, 1999) and influences a person’s willingness to improve/change the relationship (Bresnen and Marshall, 2000a; Kwan and Ofori, 2001). The fundamental problem of organisation is about reconciling and bringing together individuals and groups with divergent, often conflicting, interests and perspectives. Perceived loss of competitiveness (Bresnen and Marshall, 2000d; Briscoe *et al.*, 2001) can further fuel this negative attitude.

Various studies show that up-front commitment, fear and uncertainty in cultural transformation (Rooke *et al.*, 2003), partnering selection criteria (Eriksson and Laan, 2007; Eriksson *et al.*, 2008), lack of management support (Bresnen and Marshall, 2000d; Ng *et al.*, 2002b; Akintoye and Main, 2007) and inappropriate organisational structure (Grimsey and Graham, 1997; Bresnen and Marshall, 2000d, 2000a) can also contribute to the reluctance to change to an integrating culture. Furthermore some practitioners raise concern over a collaborative relationship due to its nature that lead to allegations of corruption (Chan *et al.*, 2003c) and over-dependency on other partners (Bresnen, 2007). The unchanged traditional adversarial relationship and other inappropriate attitudes hamper the development of good relationships between contracting parties.

4.2.3.8 *Win-lose attitude*

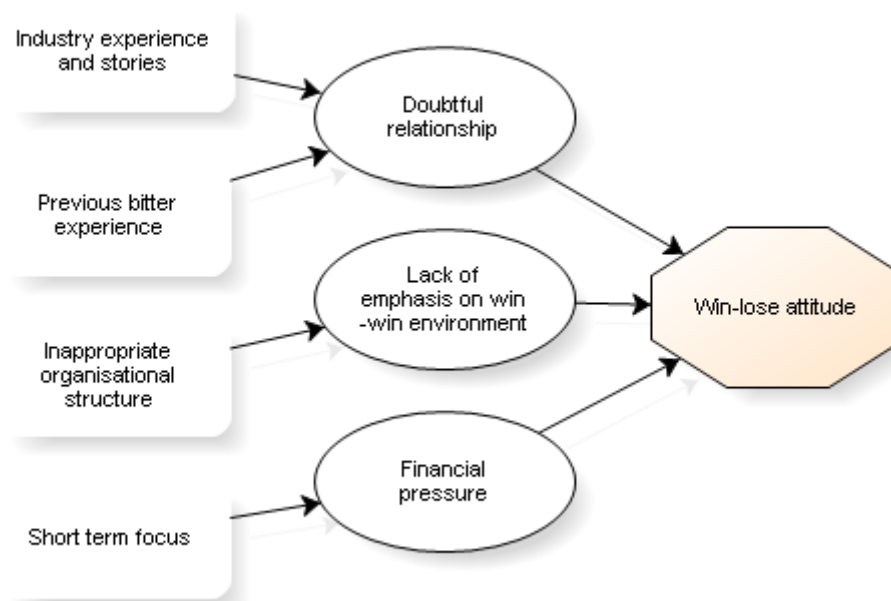


Figure 4-9: Cognitive representation of issues related to win-lose attitude

A win-lose attitude is mainly influenced by a doubtful relationship between contracting parties and changing long established mind sets may pose the greatest challenge (Kumaraswamy and Morris, 2002). Previous bitter experience and the adversarial nature of the construction industry contribute to a narrow-minded win-lose attitude. Furthermore, lack of emphasis on a win-win environment (Akintoye *et al.*, 2000) especially when dealing with large bureaucratic organisations (Chan *et al.*, 2003c; Chan *et al.*, 2006) and

financial pressure (Jones and Kaluarachchi, 2007) due to short term focus (Bubshait, 2001; Bresnen, 2007), also amounts to a win-lose attitude. Ingirige and Sexton (2006) state that the traditional focus on short-term profits in single projects constitutes a barrier since it may take a long time before cooperative relationships result in continual improvement and increased profitability. This attitude stays at the heart of industry problems and it is vital to address this at the early stages of construction projects, otherwise they may not commit to change and work in a team environment.

The above systematic review of literature on cultural and behavioural challenges in construction partnering arrangements provided a rigorous conceptual underpinning for the next stage of data collection, where the interview questionnaire and guidelines were formed with prior knowledge and understanding of related issues (refer Appendix D). This categorisation helped to focus interviews on root causes of cultural and behavioural challenges in construction partnering projects as discussed in the next section.

4.3 Data analysis: Expert interviews

4.3.1 Root causes of cultural and behavioural challenges: academic experts' perspective

4.3.1.1 Background information to academic expert interviews

Semi-structured interviews were conducted on 10 academic experts with a minimum of 5 years partnering research by 2007 (refer to Section 3.5.1.2 of Chapter 3 for more details about the semi-structured interview respondents). Based on the concept of the cultural web (see Section 2.3.2 of Chapter 2), responses were divided into 7 categories of analysis: rituals and routine; stories; symbols; power; organisational structure; control systems; and, paradigm. Data analysis was conducted using a priori/deductive coding technique (refer to Section 3.5.2.1 of Chapter 3) where root causes were drawn by means of code based content analysis and were arranged into a tree of free nodes. These free nodes were then arranged into parent nodes, which are the 7 sub elements of the cultural web, for further analysis and detail discussion. However, some of the codes and nodes exhibited belonged

to more than one sub element. In those instances, the most aligned sub element was selected for the analysis and discussion.

4.3.1.2 Rituals and routines

Based on analytical coding, a cognitive map of the rituals and routines related challenges in construction partnering projects is presented in Figure 4-10. Training and upskilling (011), poor partnering understanding (012), competitiveness (013), commitment issues (014), lack of continuity of projects (015) and legal issues (016), were identified as major cultural and behavioural challenges in this category.

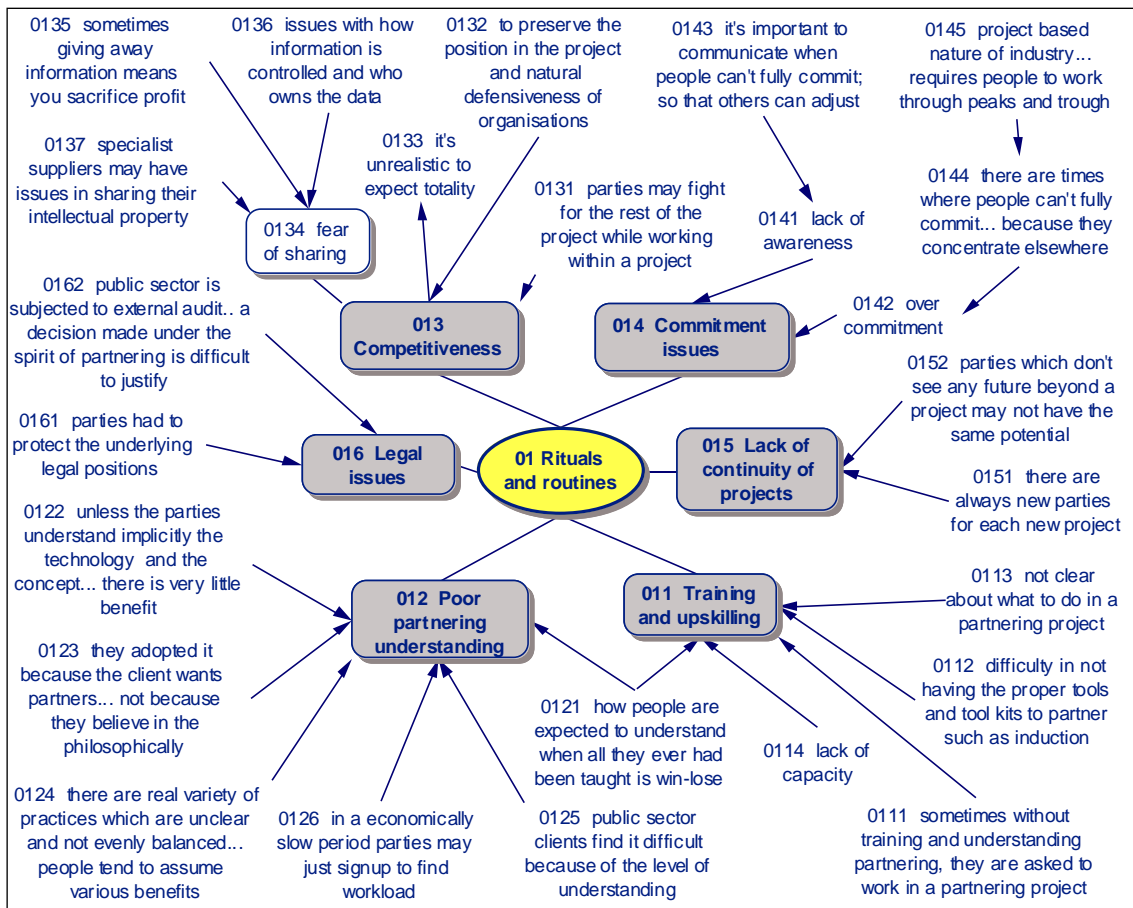


Figure 4-10: Cognitive map of academic experts' perspective on rituals and routines related challenges

Several academic experts noted that undertaking partnering contracts without proper understanding of its philosophy (012) diminishes its performance. AE06 said that “*what is win-win outcome? For clients it's about value and lower cost, and for contractors it is about guaranteed work. But, there are a real variety of practices which are unclear and*

not evenly balanced. It's all about what people expect; they all tend to assume various benefits (0124)". AE02, AE03 and AE09 also verified this notion. AE03 went on to state that *"especially, public clients find it very difficult because of the level of understanding and the mindset required for this (0125)"*. AE04 mainly raised questions regarding the role of education in teaching win-win concepts (0121) and emphasised the requirement in implicitly understanding the technology and concept to obtain benefits (0122). On the other hand, AE05 highlighted some of the difficulties where contractors sign up for any workload in this current economically slow period (0126) and they are forced to adopt partnering not because they believe in the philosophy, but of contractual obligation (0123).

Experts pointed out the importance of training and upskilling (011) in order to improve the way people do things in partnering arrangements. AE08 said that, *"there are lot of parties who aren't clear about what to do in partnering arrangements and they require proper induction to the arrangement and the philosophy behind it (0113)"*. This was asserted by AE04 and AE07, who pointed out the lack of tools and tool kits available for partnering (0112) and, at times, the lack of capacity of partnering parties (0114). Similarly, AE03, AE06, AE09 and AE10 emphasised a lack of training (0111).

According to AE05, there are new parties to each project partnering contract (0151), highlighting the lack of continuity (015) in project partnering. He went on to envisage that *"infrequent parties which don't see any future beyond a project may not have the same potential to build partnering and perform (0152)"*. Furthermore, AE04 pointed out the public sector difficulties in justifying decisions made under the spirit of partnering (0162). He also went on to express participants' inherent concerns about a project's underlying legal positions as a matter of concern in regard to legal issues.

Experts identified competitiveness (013) as one of the major challenges that is embedded in the way the construction industry operates. AE09 emphasised that, *"even though partnering is said to reduce the adversarial nature of the industry by building collaborative relationships, I believe that it won't resolve until competitive methods of selection remain in control. I have seen projects where competitive methods were used for selection of subcontractors and suppliers within a client-main contractor partnering*

arrangement. Therefore to preserve the position in the project people take unnecessary actions outside the philosophy of partnering (0132)." AE05 reaffirmed this problem and went on to say *"it is unrealistic to expect totality (0133)"*. This exists even with a project where parties may fight for the rest of the project while working within the same project (0131). Experts viewed that competitiveness can create fear of sharing (0134) by issues related to intellectual property (0135, 0137) and information control systems (0136). AE10 specifically highlighted the difficulties in sharing specialist subcontractor knowledge with the rest of the team, as it is their unique selling point.

According to AE01, *"because of the project based nature of the industry, people have to work through peaks and troughs, and it is not smooth (0145). Therefore, they over commit (0142) and there are times where people can't fully commit to some projects because they have to concentrate elsewhere (0144)"*. Then again, as noted by AE06, there are parties who are not aware of their commitments and do not communicate this to other parties; this could lead to major delays (0141, 0143).

4.3.1.3 Stories

Figure 4-11 shows stories related challenges focused on several aspects: scepticism (021), lack of confidence (022), lack of good examples (023), heroes and villains (026) and poor partnering experience (024). Most of the cultural and behavioural causes stated by academic experts were construction industry specific, although less focussed on stories regarding practical project issues.

AE01 expressed his scepticism (021) regarding the publicity of best practice case studies in construction partnering projects. He went on to state, *"people just don't believe the hype and they think was it really like that? ... I can't believe that really everything is that perfect... people doing presentations on previous project benefits, they should present an honest perspective on the project (0212)"*. This view is further augmented by the belief that partnering is another initiative or buzzword similar to several other industry agendas and all this will change back to old ways (0213, 0214). According to AE03, the reality of what people think, feel and say demonstrates a lot of mistrust and scepticism (0211). Similarly, a lack of clarity and immaturity of partnering (0221, 0222) leads to poor confidence in the concept (022).

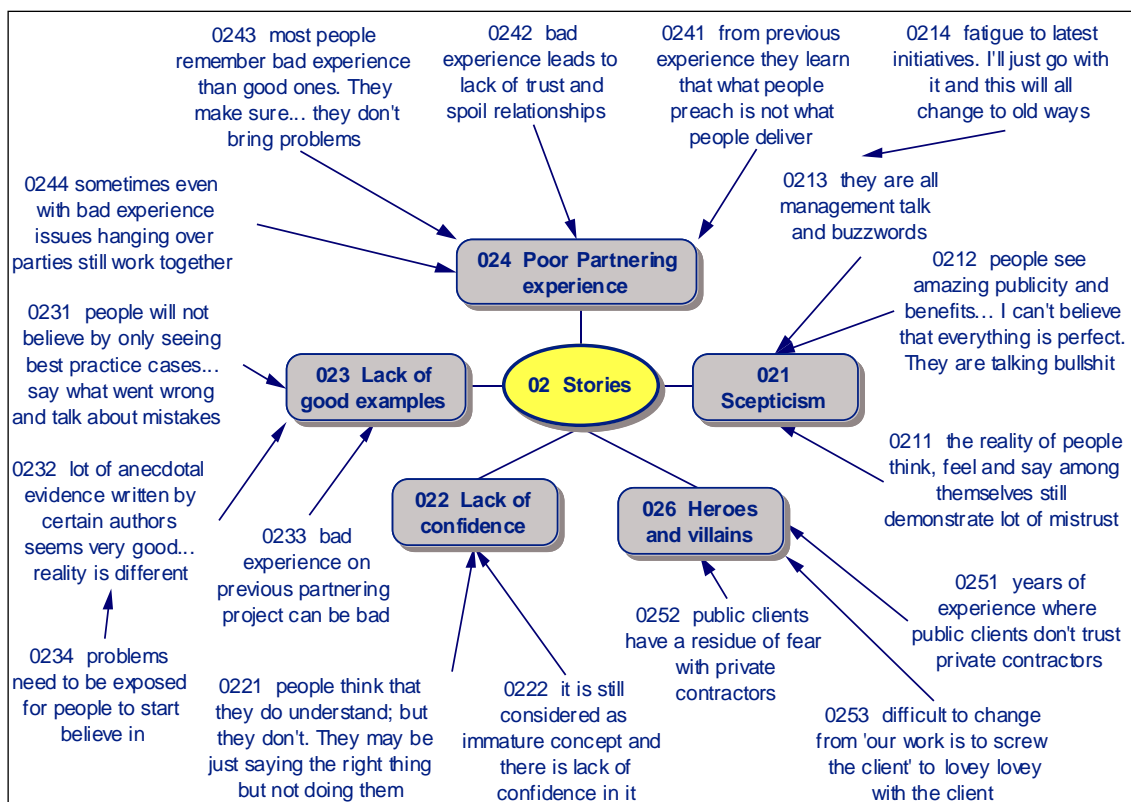


Figure 4-11: Cognitive map of academic experts' perspective on stories related challenges

However, the effort taken to remedy this by providing good examples has also been criticised by academic experts. AE03 went on to point out articles with anecdotal evidence from selected authors (0232, 0234) while AE05 indicated the importance of exposing and discussing partnering mistakes (0231). Correspondingly, poor experience on previous partnering project can deteriorate partnering performance. Poor partnering experience (024) can bring in several unwanted stories and agendas to any new partnering project (0242). Sometimes, parties with bad experience are asked to work together and these can lead to trust issues (0244). AE07 said that *“people learn from fingers burnt. What people preach is not what they deliver. So from earlier partnering projects they sometimes get to know that even though people say it is partnering, it isn't (0241)”*.

Moreover, a heroes and villains perception between clients and contractors does not allow the relationship to build smoothly. AE03 noted that, *“there is years of experience where public clients don't trust private contractors; they assume that private contractors are not entitled to make a return (0251)”*. There is still a residue of fear among public clients regarding private contractor payments and performance (0252). Notably, AE10 affirmed similar concerns by reciting an experience where, *“an experienced Planner, who was*

working for the same organisation I worked for – the main contractor – said in a discussion with me that, ‘our job is to screw the client’; that was his precise phrasing. I was a management trainee at the time. I think that kind of philosophy is ingrained within you and it’s difficult to go from that situation to a partnering contract where you meant to be lovey-dovey with the client and the sub-contractors (0253)”.

4.3.1.4 Symbols

The cognitive map shown in Figure 4-12 represents symbols related cultural and behavioural challenges in construction partnering projects.

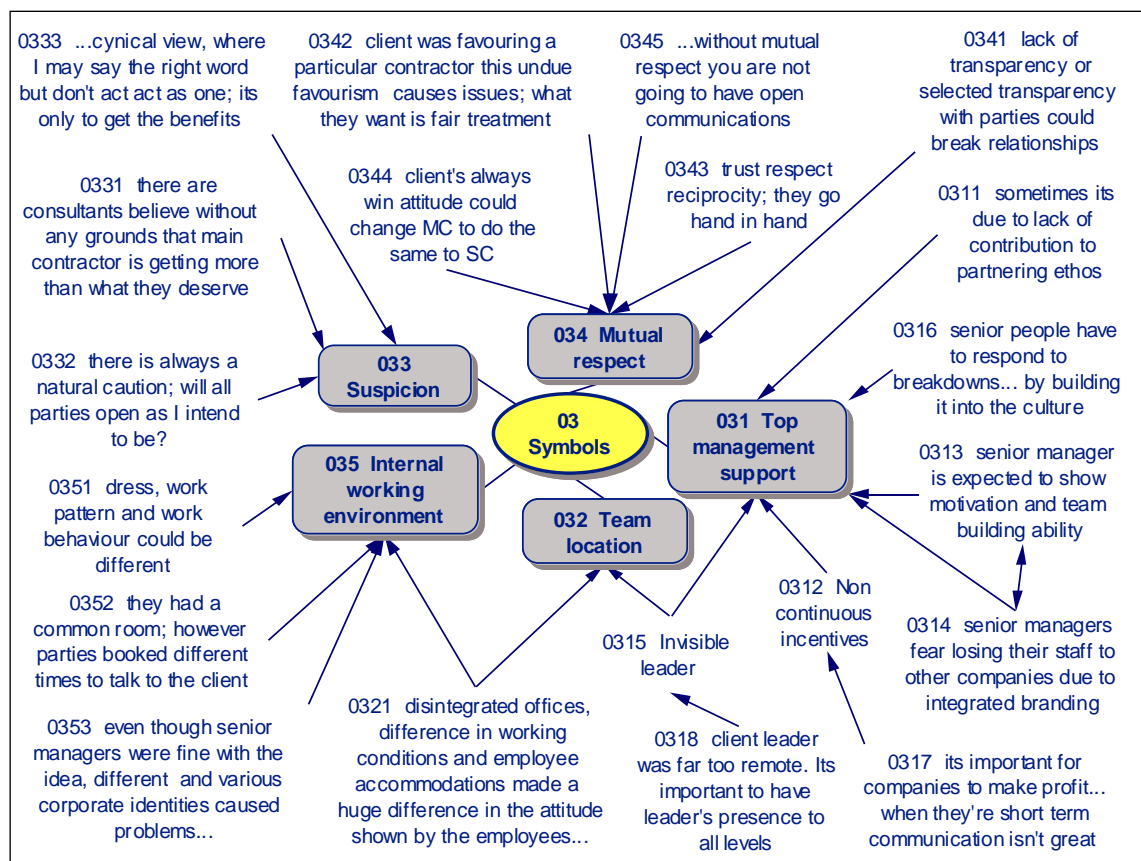


Figure 4-12: Cognitive map of academic experts' perspective on symbols related challenges

AE04 stated that “it’s all well and good when an organisation say that we are going to be a partnering organisation ... but when the Indians down on the shop floor don’t believe it and don’t adopt it, you fail”. He went on to explain that senior people need to respond to breakdowns in partnering by actually building it into the culture of the organisation so it becomes part of the fabric and nature of the organisation (0316). This requires top management support (031) in order to allow employees to make decisions that seem

uneconomical in the short term, but that may provide greater long term benefits. In support of this, AE06 and AE10 noted that the non-continuous incentives and necessity to make short term profits could damage open and honest communications (0312, 1317). Interestingly, fear of losing employees to other organisations due to integrated branding (0314) hindered the enthusiasm of senior managers to motivate and build integrated teams (0313). Furthermore, the contribution of senior management to reduce misrepresentation of a partnering ethos was highlighted by AE05, AE02 (0311).

AE10 pointed out that *“sometimes the client leader is far too remote to make decisions and they weren’t making the right decisions. It is important to have the leader’s presence to all levels (0315, 0318).”* This is also linked to team location (032) related challenges. AE10 provided an example where a disintegrated client, contractor and subcontractor office accommodation and working environment made a difference in the attitude shown by employees (0321). Comparison was made between team locations where one of the participants was located in a semi luxury office arrangement while another participant was sited in more traditional site cabins. This made an immense difference in project climate and internal working environment (035). Separate corporate identities (0353), and work patterns and behaviours (0351, 0352) were also noted as reasons behind the issues with internal working environment. In explaining the internal working environment, AE08 mentioned that, *“... only one company was responsible for all recordings (weather, plant, progress etc); it was hard for other parties to get use to that type of arrangement. The fact that these recorders were located in the head office gave little room for face to face communications.”*

Belief that the other party is getting rewarded more than what they deserve (0331), natural caution and self-defence (0332), and a cynical view (0333) have created suspicion among parties. These concerns led to defence building and took a major portion of participants’ activities. Similarly, a lack of mutual respect can hinder open communications (0345) and lack of transparency or selected transparency (0341) could aggravate the situation. AE07 stated that trust, respect and reciprocity go hand in hand (0343) and it is unfair for a client to favour a particular contractor (0343). These types of unfair treatment could symbolise the nature of a relationship between parties of a partnering project (0344).

4.3.1.5 Power

The cognitive map in Figure 4-13 represents power related cultural and behavioural challenges in construction partnering projects. Power struggles between individuals and other parties to the partnering contract are included within this analysis.

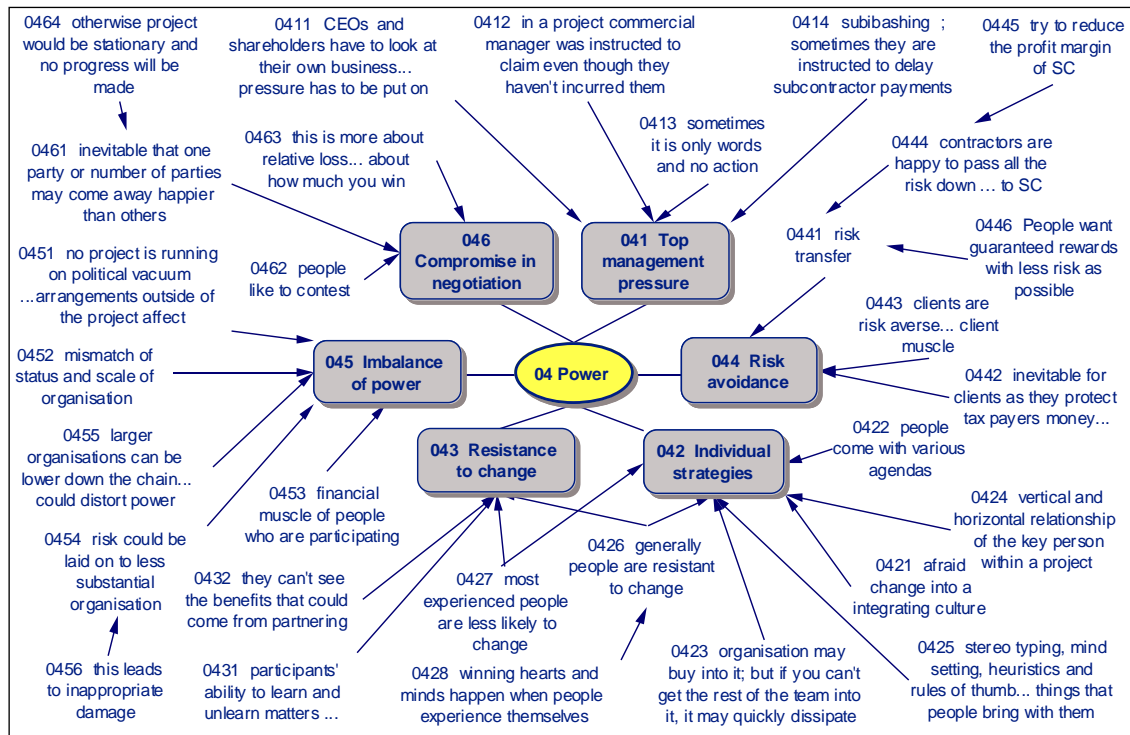


Figure 4-13: Cognitive map of academic experts' perspective on power related challenges

Experts highlighted individual strategies (042) as one of the major cultural and behavioural challenges in construction partnering projects. AE08 and AE09 mentioned that people come with various agendas (0422) and it was affirmed by AE04. He went on to say, *“stereo typing, mind setting, heuristics and rules of thumb, all the usual things that people bring with them. It is the old dog, new tricks (0425)”*. Speaking about the key individual in a partnering project, AE07 said, *“Too often there is one person who is a key guy in a relationship. His perception of partnering and his behaviour epitomise what partnering is within a project. His vertical and horizontal connections within a project are a key (0424)”*. According to AE03 and AE10, project participants need to buy into the partnering agenda and collaborative work (0423). AE06 said that, *“some people are difficult to change; they are not collaborative animals”*. Most experts emphasised that the main struggle is about changing individuals to an integrating culture (0421, 0426 and 0427).

Several experts noted that most experienced people are less likely to change (0427) and generally people are resistant to change (0426). This was identified as the primary cause for the resistance to change (043). AE01 added that, *“it is a problem bigger than construction and to try to get more people to become more receptive to change and new ideas is something which takes time and perhaps it takes other leaps as well. Winning hearts and minds will only happen when people have experienced it themselves (0428)”*. AE03 further explained that, *“for people working in the industry for a long time, the culture and the step changes are issues”*. Moreover, AE03 and AE06 mentioned that the inability of some people to see partnering benefits (0432) and to learn and unlearn, are other reasons underpinning resistance to change in partnering projects.

The client’s inability to take risks (0443) and their desire to protect tax payers’ money (0442) were emphasised as some of the reasons for a routine of risk avoidance (044) in partnering projects. AE02, AE03 and AE09 further added that, *“they use client muscle to get rid of risks”*. Risk transfer (0441) is also seen as another way of avoiding risk, which involves shifting and manipulating power within projects. AE01 and AE07 mentioned that the main contractors try to pass risk down the supply chain and shift as much risk as possible to subcontractors (0444). AE07 termed it as a, *“type of subby-bashing; where you give more risk and try to reduce the profit margin of subcontractors wherever possible [Sic] (0445)”*. AE09 further mentioned that, *“parties want guaranteed rewards and they want to make sure that they are not responsible for carrying as much risk as possible (0446)”*.

Power related challenges also come from top management pressure (041); sometimes it is regarding unfair treatments of specific parties. AE03 recalled an instance stating that, *“in a project, a commercial manager was instructed to claim £250,000 by a senior manager even though they haven’t incurred those (0412)”*. Similarly, AE01 mentioned, *“CEOs and shareholders have to look at their own business and pressure has to be put on them to make sure the company comes out with any business deal (0411)”*. On the contrary, the inability of top management to take necessary action, which affects top management support and eventually leads to power and culture challenge, is also viewed as a reason (0413). Furthermore, *‘subby-bashing; where people are instructed to delay subcontractor*

payment' is also noted by AE07 as a reason for the power struggle within construction partnering projects.

Experts also viewed the way in which compromise is being achieved during negotiations (046) as a power related challenge. AE01 said that people like to contest (0462) and AE10 made a comparison between these negotiations and football indicating that, *"unlike football it is not just about win lose. It's about by how much you win (0463)"*. AE01, AE09 and AE10 noted that although one party comes away happier than others in a compromise (0461), it is important for a project to progress further (0464).

Furthermore, academic experts emphasised the imbalance of power (045) as a major power related challenge in construction partnering projects. AE08 noted that a mismatch of status and scale of organisations involved in a partnering project could skew relationships (0452). AE05 affirmed this by saying, *"sometimes lower down the hierarchy there are larger, more substantial organisations than someone higher in the hierarchy and this can distort the power based relationship between organisations (0455)"*. AE07 expressed similar concerns regarding the financial muscle of people who participate in partnering arrangements (0453). As a connected reason, experts mentioned the possibility of risk being laid on less substantial organisations (0454), which could lead to inappropriate risk apportionment and damage. In addition AE04 pointed out political issues stating that, *"no project is running in a political vacuum and there are always machinations and arrangements that are being taken outside of the project but that affect and have an impact on the project relationships. A change of government can have dramatic effect on the way a project behaves (0451)"*. He further illustrated: *"there was a change of government in Portugal, and the government suddenly did a bad phase on one of the previous government policies. It had a catastrophic effect on a project which was 70% built. So much so, the private sector client actually went bankrupt because of the change in government policy"*.

4.3.1.6 Organisational structures

Figure 4-14 provides organisational structure related cultural and behavioural challenges in construction partnering. The root causes of this challenge is analysed and represented in this cognitive map.

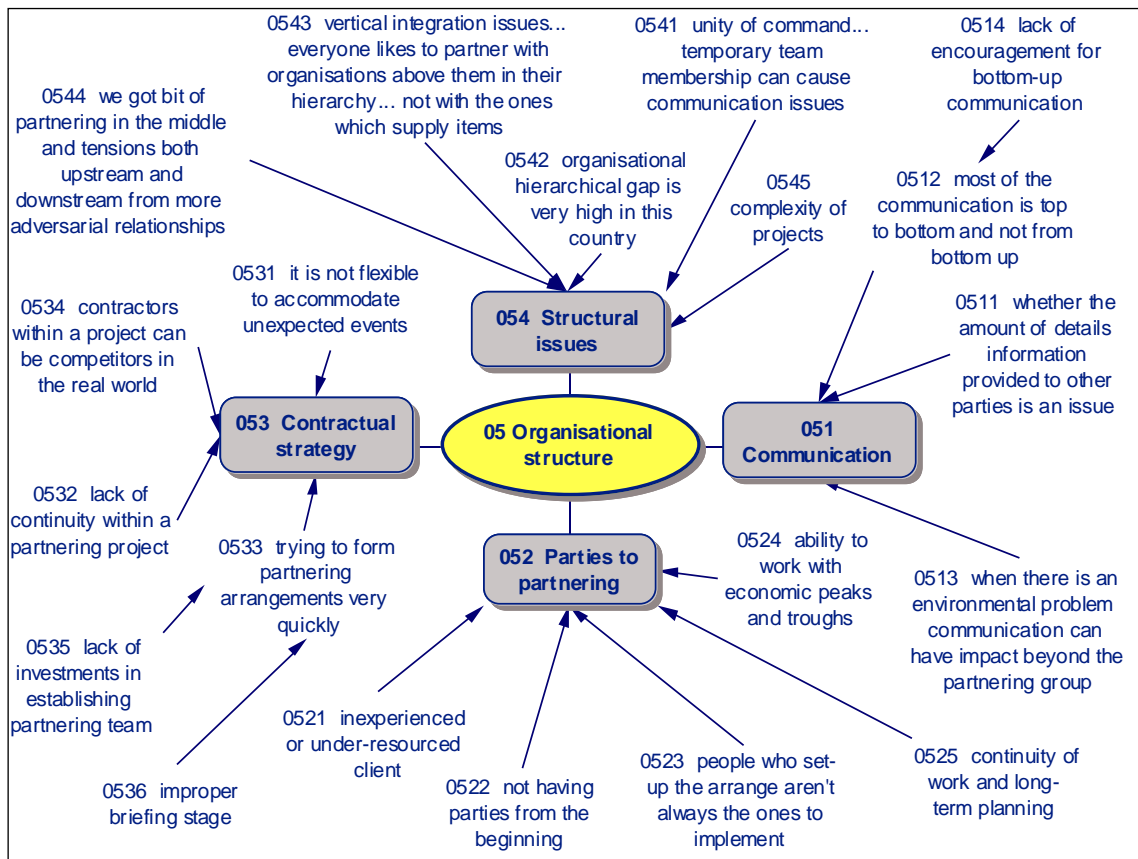


Figure 4-14: Cognitive map of academic experts’ perspective on organisational structures related challenges

Academic experts emphasised several structural issues (054) in partnering arrangements. AE05 pointed out, “*everybody often wants to partner upwards in the chain; they want to partner with the organisation above them in the hierarchy but are less keen to partner with those beneath them and who are supplying to them (0543)*”. Similar concerns are expressed by AE04, who stated that, “*there is a bit of partnering in the middle, and with the tensions both upstream and downstream, it suffers from more adversarial relationships (0544)*”. Also, AE09 and AE10 spoke about issues with unity of command when there is a temporary team membership to partnering arrangements (0541). Furthermore experts mentioned the complexity of projects (0545) and a hierarchical gap or power distance in the UK (0542) as some other reasons for this cause.

Another area of concern comes from contractual strategy (053). AE05 and AE10 mentioned the problems in trying to form partnering arrangements very quickly (0533) as a result of an inadequate investment in establishing partnering (0535) or an improper

briefing stage (0536), which could hinder the development of collaborative relationships. According to AE05, a lack of continuity within partnering projects could affect the motivation of the parties involved. In contrast, AE07 mentioned that contractors within a project can be competitors in the real world and that could affect the open, honest and transparent communication. AE04 spoke about unexpected events in contracts and acknowledged that, *“it is desirable to have a flexible system to accommodate some unexpected events in the contract (0531)”*.

Academic experts highlighted some of the challenges related to parties in a partnering contract (052). According to AE01, an inexperienced and under resourced client (0521) could create problems. He added, *“It’s a fact of life; it doesn’t work in their favour; no matter how many good intentions they have, they still have to deal with it”*. In addition, the ability of parties to work through economic peaks and troughs is also a concern in developing relationships (0524). Similarly, continuation of work and long term planning of parties can cause structural problems (0525). AE01, AE08 and AE10 spoke about the failure of parties to engage from the early stages of partnering arrangements (0522). AE03 also expressed similar concerns stating that, *“people who setup the arrangement aren’t always the ones to implement it”*. Organisational structure related communication (051) is another issue where a lack of encouragement (0514) results in poor bottom-up feedback (0512). This can harm the entire philosophy of partnering, where integration and collaboration is expected within parties to the partnering contract. Furthermore, problems related to the amount of information flow between parties (0511) were also highlighted by experts.

4.3.1.7 Controls

The cognitive map in Figure 4-15 shows an analysis of the control related cultural and behavioural challenges in construction partnering projects. This considers management related monitoring systems that could influence the cultural setting within partnering projects.

Similar to other cultural and behavioural challenges, the financial motive (061) is regarded as one of the root causes of control related challenges. AE01 stated that the biggest driver is profit (0613) and added that, *“the main interest of parties is securing the best deal for*

themselves (0611)”. AE02, AE03, AE08 and AE10 also maintained this notion. AE02, linking this to the issues of the paradigm, expressed that a financial motive could lead to trust issues (0612). Similarly, misalignment of objectives (066) could cause monitoring and control related issues in partnering projects. According to AE09, “it’s difficult to align people’s own objectives for the project and to try and get people facing in the same direction (0661)”. AE01 supported this by pointing out, “building long term business relationships is not a priority for a lot of people (0662)”.

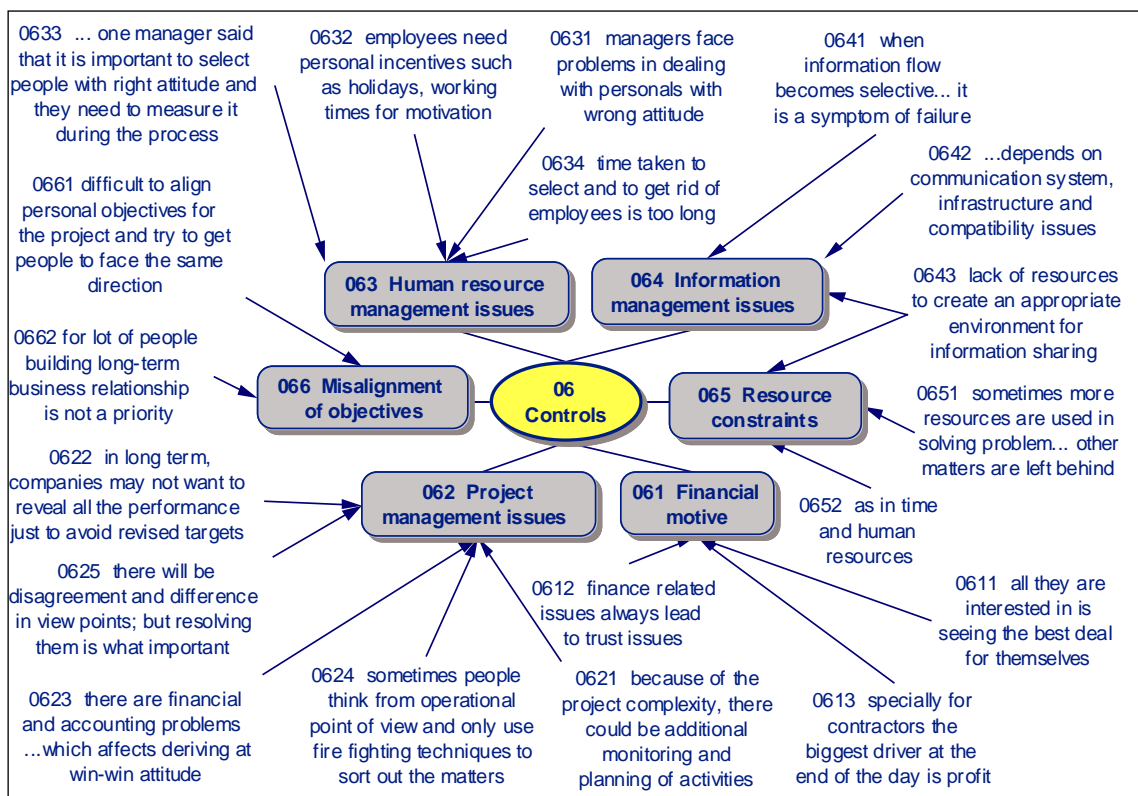


Figure 4-15: Cognitive map of academic experts’ perspective on controls related challenges

Resource constraints (065), especially in time and human resources (0652), can cause problems in control related areas. According to AE01, inefficient use of resources could also result in the same outcome. Speaking about information management issues, AE07 stated that, “a lack of resources to create an appropriate environment for information sharing could cause issues with day to day communication flow (0643)”. This could depend on infrastructure and compatibility of communication systems (0642). AE02, AE05 and AE06 emphasised ‘selective information flow’ (0641) and the destruction it could cause to the entire partnering philosophy.

Human resource management related issues (063) also affect the control and monitoring related cultural settings. According to AE03, *“it is important to select people with the right attitude and they need to measure the process (0633)”*. AE08 affirmed this, stating that managers could face problems in dealing with personnel that had the wrong attitude (0631) and the time taken to get rid of such an employee and to select a new one, is too long (0634). Furthermore, AE10 added, *“employees need personal incentives, such as holidays and flexible working times for motivation (0632)”*.

Experts highlighted project management (062) related control issues. AE07 stated that project complexity could lead to additional monitoring and planning activities (0621). This was also supported by AE04, who pointed out problems in finance and accounting (0623). AE03, when speaking about dispute resolution, noted that, *“there will be disagreement and differences in view points; but resolving them is what is important (0625)”*. AE02 and AE07 reaffirmed this notion, stating that people think from an operational point of view and only use fire fighting techniques (0624). AE09 and AE10 pointed out an interesting phenomenon where companies do not like to reveal all their performance to avoid revised targets (0622). AE10 went on to say *“this highlights the difficulties the client has when they try to incentivise continuous improvement”*.

4.3.1.8 The paradigm

The cognitive map in Figure 4-16 shows an analysis of the paradigm related cultural and behavioural challenges in construction partnering projects. Although respondents fail to express fragmentation explicitly, the discussion on other elements clearly shows the division between the viewpoints of various parties to a partnering arrangement. However, academic experts expressed the opinion that there is a reduction in fragmentation, although whether it has achieved the required level, is unclear. Hence, fragmentation related issues are not included in the overall picture of partnering challenges.

First and foremost, academic experts heavily emphasised mistrust (071) as one the significant challenges in partnering projects. AE02 and AE03 stated that trust in construction is superficial and not deep (0712). AE01 and AE10 added that, *“previous experience might be the reason for lack of trust (0713)”*. Experts highlighted financial pressure (0711) as a major cause. According to AE01, *“there is a need for an organisation*

to look after themselves to make sure that they have a good deal for them (0716)... the bottom-line is that organisations have to secure their own future (0718)”. AE09 supported this notion saying, “companies want the best for themselves and that is the mentality you take into to any project, and trust becomes the major issue (0717)”. A focus on profit (0715) and fear of sharing information (0719) are also considered as causes of the financial pressure that leads to mistrust between parties. Interestingly, AE02, AE03 and AE09 considered the market economy, on which Western counties operate, as a cause of mistrust (071).

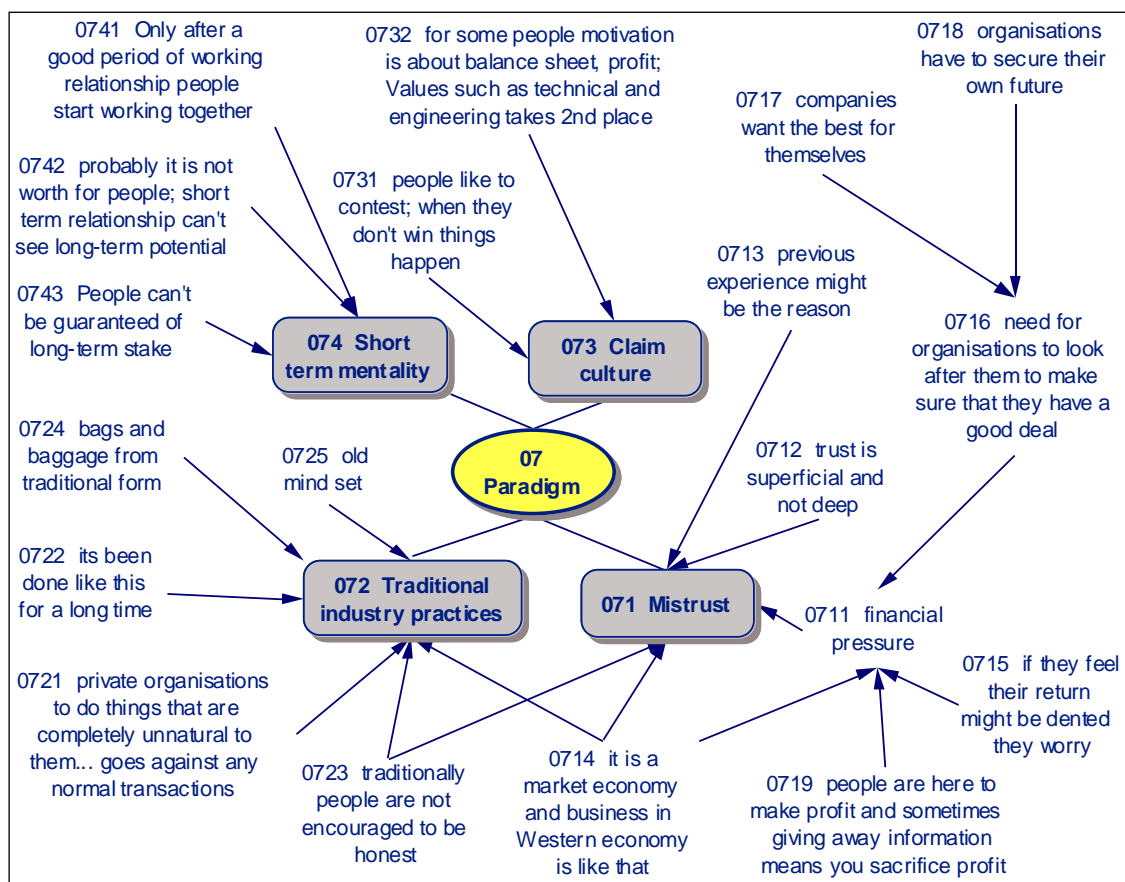


Figure 4-16: Cognitive map of academic experts’ perspective on paradigm related challenges

Traditional industry practices (072) seem to continue under partnering and it affects partnering performance and relationships. AE03 stated that traditionally people are not encouraged to be honest. AE01 affirmed this by saying, “it’s been done like this for a long time and this is the way lot of people work in the industry (0722)”. Furthermore, the old mindset (0725) and baggage from a traditional form of contracting (0724) were also mentioned by experts as some of the reasons for the continuation of traditional industry practices. AE10 further added that, “especially, private commercial organisations do

things that are completely unnatural to them, like open book accounting. It goes against any normal transactions (0721)”.

Experts also spoke about the claim culture (073) as something which is a normal practice within the construction industry. AE02 mentioned the focus on short term profit (0732), while AE01 and AE05 pointed out that people like to contest (0731). AE03 provided an example to illustrate the common mentality regarding claims in the construction industry. In addition to that, experts strongly believed in the need to tackle short term mentality (074) within partnering projects. AE03 and AE08 noted that building trust takes time and only after a good period of the working relationship will people actually start working together (0741). Similarly, AE01, AE03 and AE05 supported the notion that, “*short term relationships can’t see long term potential (0742)*”. Conversely, people cannot be guaranteed of a long term stake (0743) and it will not help to develop long term vision and trust.

4.3.2 Root causes of cultural and behavioural challenges: industry experts’ perspective

4.3.2.1 Background information to expert interviews

In addition to academic and research experts, 10 experts on construction partnering from the construction industry were selected and interviewed for this study (refer to Section 3.5.1.2 of Chapter 3 for more details about the semi-structured interview respondents). Based on the concepts of the cultural web, responses were divided into 7 categories of analysis: rituals and routine; stories; symbols; power; organisational structure; control systems; and, paradigm. Data analysis was conducted using a priori/deductive coding technique where root causes were drawn by means of code based content analysis (refer to Section 3.5.2.1 of Chapter 3). These free nodes were then arranged into parent nodes, which are the 7 sub elements of the cultural web, for further analysis and detailed discussion.

4.3.2.2 *Rituals and routines*

Based on analytical coding, a cognitive map on the rituals and routines related challenges in construction partnering projects are presented in Figure 4-17. Training and upskilling (111), poor partnering understanding (112), competitiveness (113), commitment issues (114), lack of continuity of projects (115) and legal issues (116), were identified as major cultural and behavioural challenges in this category.

According to IP05, the UK construction industry has become more of a multinational work force and it will require training and a change to a win-win attitude across the people coming into the system (1111). He went on to point out that, *“the managers in construction sites may have problems because they have never worked in multicultural situations. Therefore, larger organisations should train their managers to deal with multinational cultures (1112)”*.

Several industry experts considered poor partnering understanding as a major challenge in partnering projects. IP03 said that as contractors they have to make profit and it will not allow them to attain a win-win attitude, indicating a lack of understanding of collaborative ways of working to produce better performance and to share rewards (1121). He went on to point out that it was the first partnering project for the client and contractor, and they were unable to realise partnering benefits (1122 and 1123). IP02 and IP09 talked about a lack of cultural alignment towards the partnering philosophy. IP02 mentioned that, *“sometimes main contractors employ a sub-contractor without signing up to the partnering belief; but I think it is still manageable to the main contractor to look after the subcontractor without them necessarily signing up to the partnering belief, although this would be less efficient (1124)”*. IP06 expressed a similar notion and noted that some people assume to do things in the way they have always performed (1125). While IP01 revealed the lack of education regarding partnering principles (1126 and 11261) IP05 noted a lack of partnering understanding in the middle levels of management (1127 and 1128).

According to IP01, it is about competition between organisations (113) and fear of sharing due to loss of competitiveness (1132 and 1135). In support, IP03 noted that often as a contingency people do not release specific information (1131). He also went on to talk

about a particular incident and stated that, “*although the contract promotes an 'open book' environment, it is evident that both parties act upon their own interest (1133)*”. IP07 mentioned challenges with undercutting prices and said that, “*there are contractors who send 200 letters to claim; that is due to trust, their contractual approach and core values (1134)*”. However, IP10 noted a lack of competitiveness due to the nature of partnering and went on to say that, “*partnering is a double edged sword, because in one side the ideas are good and can work well, and on the other side people become comfortable in the environment, start slacking, and they see opportunity when their next job is guaranteed and they can make some money back (1136)*”.

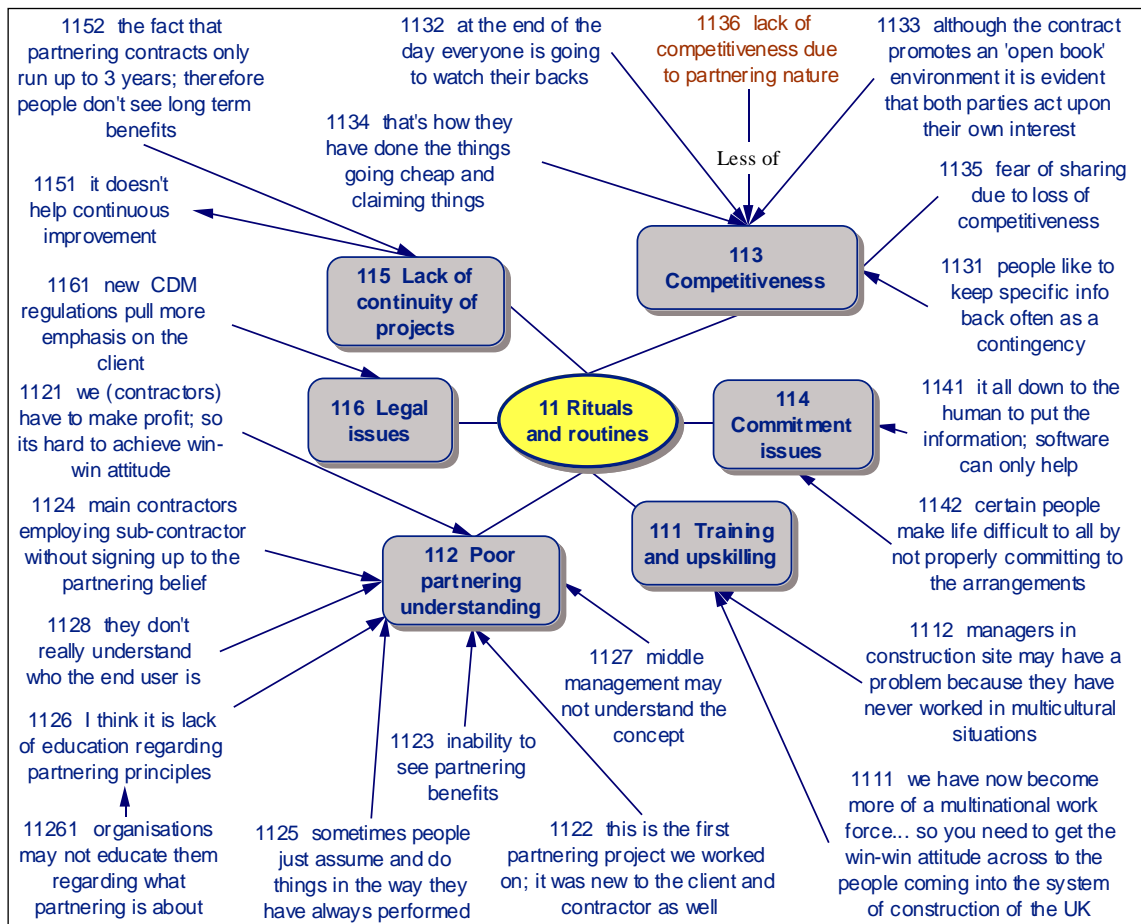


Figure 4-17: Cognitive map of industry experts' perspective on rituals and routines related challenges

According to IP06, people can make life difficult to everyone engaged in a project by not properly committing to the arrangement (1142). A similar notion was mentioned by IP05, who went on to say that, “*software like active planner can help a lot; but again it's all down to the human input and not having the wrong team members; even a wrong leader (1141)*”. IP04 spoke of the lack of continuity of projects (115) and its effect to continuous

improvement (1151). IP01 considered his current project and declared that, *“the fact is that partnering contracts only run up to 3 years; therefore people don't see long term benefits (1152)”*. Furthermore, IP02 pointed out legal issues regarding health and safety, and noted that new construction design and management regulations specify more emphasis on the clients (116 and 1161).

4.3.2.3 Stories

As shown in Figure 4-18, stories related challenges focussed on several aspects: scepticism (121), heroes and villains (123), poor partnering experience (122) and bad industry practices (124). In contrast to academic experts' opinion, causes such as lack of good examples (023) and lack of confidence (022) were not expressed by industry experts, indicating the focus on project and site challenges rather than the industry overall. However, industry experts pointed out an additional stories related challenge on the transfer of bad industry practices (124) to the younger generation. IP07 and IP10 noted that, when a younger generation come in, their mentors who are from the old school affect their behaviour (1242). This view is also supported by IP05. He mentioned that, *“Learning from the old site agents is never ever going to improve the situation unless we start saying to the young managers, right, you are going to do a couple of years on the tools and then we will develop you (1241)”*.

IP09 expressed his scepticism (121) regarding the fundamental view of partnering philosophy. He emphasised that some people see partnering as a buzzword and they just give enough lip service to win projects (1212). IP07 provided a few examples regarding rumours which affect projects by increasing uncertainty. He said, *“certainly in this situation, there are lot of financial difficulties; so when there is a bad rumour about a company going bust, it could affect relationships within a project and lead to all types of relationship type problems (1211)”*. From industry experts' point of view, these stories related challenges were further aggravated by a poor partnering experience (122) of parties to partnering contract. IP04, IP07 and IP10 highlighted the impact of a bad partnering experience (1221) on developing trust and an integrated culture. According to IP04, *“some people understand the meaning of partnering through their own practice in partnering and it may lead to problems (1222)”*.

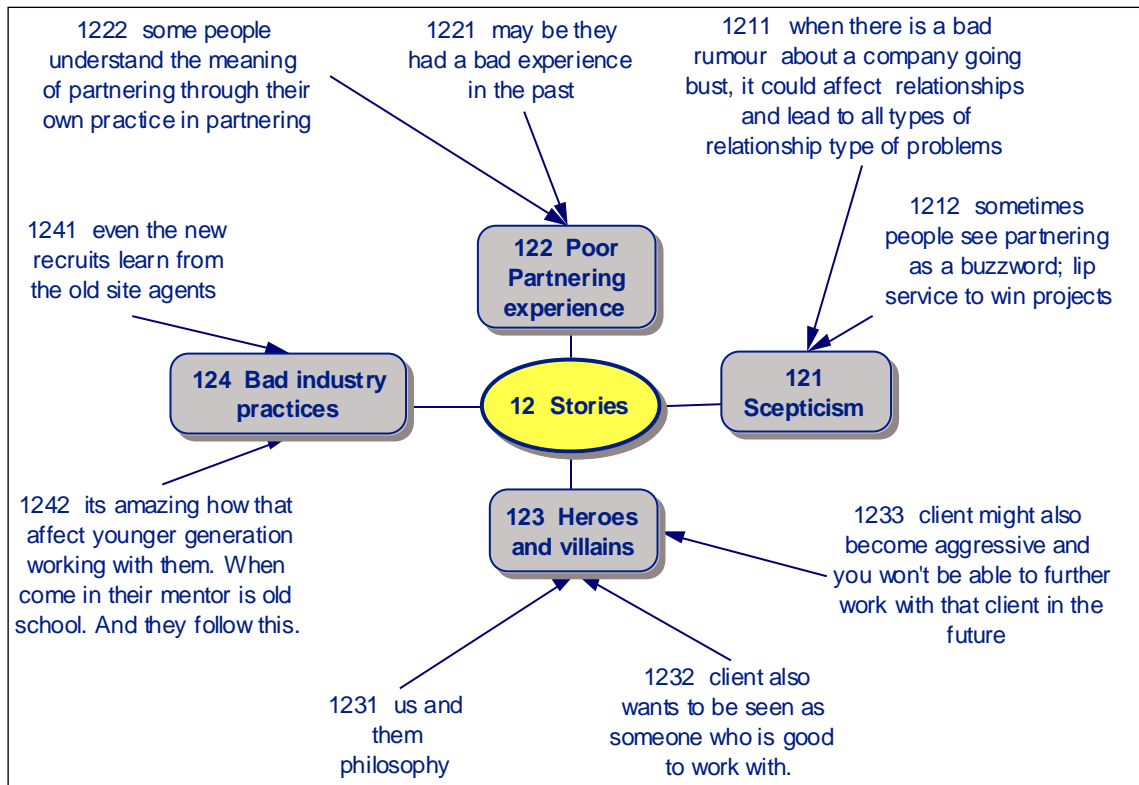


Figure 4-18: Cognitive map of Industry experts' perspective on stories related challenges

Furthermore, a heroes and villains perception was pointed out by IP06, noting that the industry has a ‘*them and us*’ philosophy (1231). This hinders any initiatives taken to create trust and a win-win attitude. Interestingly, IP03 stated that “*you don’t need to trust people to work together or to achieve win-win; it’s what I believe*”. However, there is a strong body of research on trust playing an important role in creating a comfortable environment for a win-win attitude (Naoum, 2003; Shek-Pui Wong and Cheung, 2004; Cheung *et al.*, 2011; Laan *et al.*, 2011). IP02 indicated the heroes and villains perception between clients and contractors by saying, “*Nothing works for the client if no one works with him, seeing them difficult and not helpful (1232)...at the end of the day if the client or the client's Project Manager see that you are not acting fair, they might also become aggressive and it might cause conflict and stuff. And also, you won't be able to further work with that client in the future. (1233)*”.

4.3.2.4 Symbols

The cognitive map shown in Figure 4-19 represents industry experts’ views on symbols related cultural and behavioural challenges in construction partnering projects.

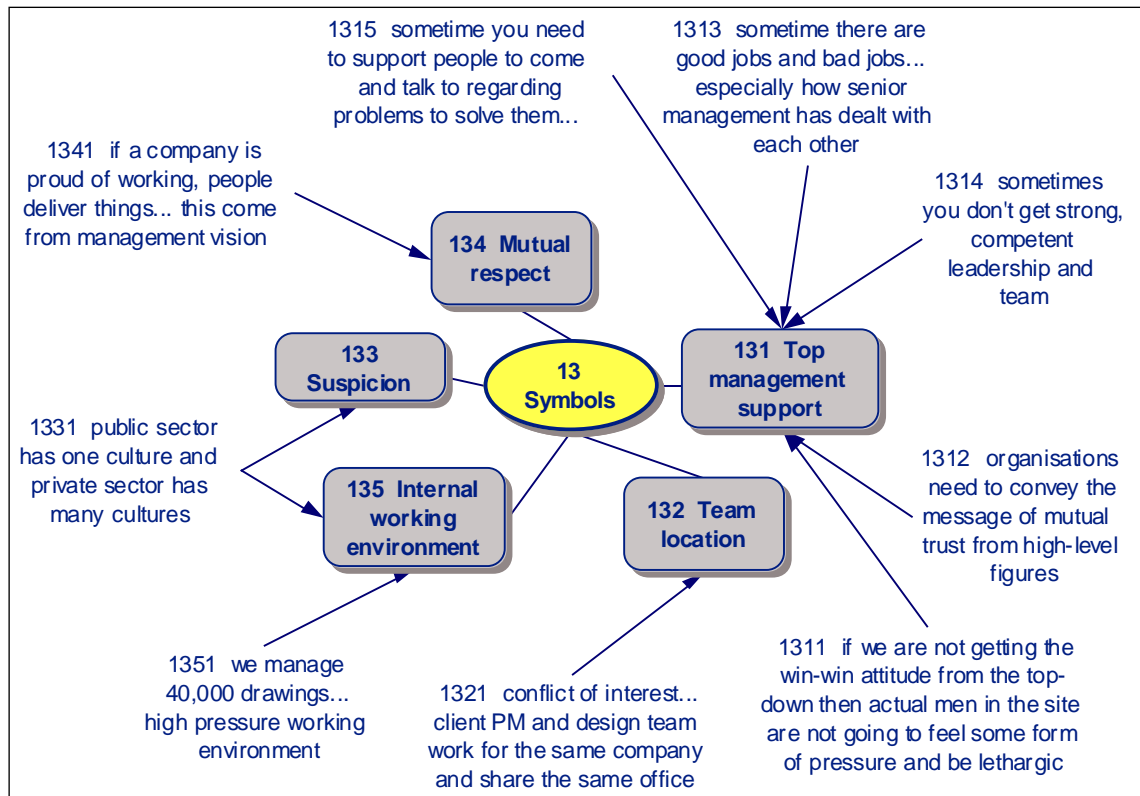


Figure 4-19: Cognitive map of Industry experts' perspective on symbols related challenges

The top management support (131) and related activities took centre stage in the experts' opinion regarding symbol related challenges. According to IP06, organisations need to convey the message of mutual trust from high-level figures (1312). This was affirmed by IP05, who stated that, *"I think the drive for a win-win attitude must start at the top and if we are not getting the win-win attitude from the top-down then actual men on site are not going to feel some form of pressure and be lethargic about what's happening (1311)"*. When talking about top management behaviour as a symbol, IP10 stated that *"there are good jobs and bad jobs; people burn their fingers; especially how senior management has dealt with each other and whether the trust is there (1313)"*. He further went on to mention that, when there is a bad relationship between senior managers that could ruin the entire collaborative nature of partnering. IP07 and IP09 supported the notion that projects require a strong, competent leadership and team (1314) and when it is not present that could lead to the escalation of issues. IP07 went on to indicate that people need support to solve problems (1315) and the management should take necessary steps to facilitate that.

IP02 and IP10 pointed out the importance of mutual trust (134) between parties to a partnering contract. They mentioned that, if parties feel proud working for them (main

contractors), then people deliver things (1341). IP10 went on to say that, *“it comes from management vision and transformational activities of the project manager”*. In regard to his current project, IP03 mentioned, *“the client project manager and design team work for the same company and share the same office; I see this as a conflict of interest (1321)”*. This shows the importance of team locations (132) and arrangement of office settings. Hence, the internal working environment needs to be practical and symbolise a balanced treatment between parties to support the management vision and partnering philosophy. IP07 highlighted the high pressure working environment, especially when they are dealing with 40,000 drawings (1351). The fact that private and public sectors have different working cultures (1331) worsens the working climate in PPP projects. According to IP05, *“to bring those together is extremely difficult, there is mistrust, misunderstanding and not fully comprehending about what one party is doing and why they are doing it”*. These cultural differences could create suspicion (133) and ultimately friction between parties.

4.3.2.5 Power

The cognitive map in Figure 4-20 represents industry experts' views on power related cultural and behavioural challenges in construction partnering projects. In contrast to academic experts' perspective, top management pressure (041) and compromise in negotiation (046) were not regarded as challenges by industry experts. According to industry experts, most of the power related challenges originated from individual strategies (144) and resistance to change (141).

Industry experts highlighted individual strategies (144) as one of the major power related cultural and behavioural challenges in construction partnering projects. IP05 and IP06 discussed the difference in personalities and difficulties in aligning them into a similar mind set. IP06 went on to point out a conflict between personalities within projects and employees' own goals and agendas. IP07 mentioned that, *“if people aren't ready to work as a team then we have a problem; you get into the arguments on the telephone and extra meetings so it becomes expensive (1442)”*, indicating some of the effects of a non-collaborative mind set within partnering environments. He also went on to point out motivational constructs to change behaviours (1443). Similarly, IP05 and IP08 stated issues related to short term employments and the sense of insecurity which comes together

with it (1442, 1450 and 1444). IP10 talked about a specific individual and stated that, “some people are not professional in their approach and don't have integrity (1441)”.

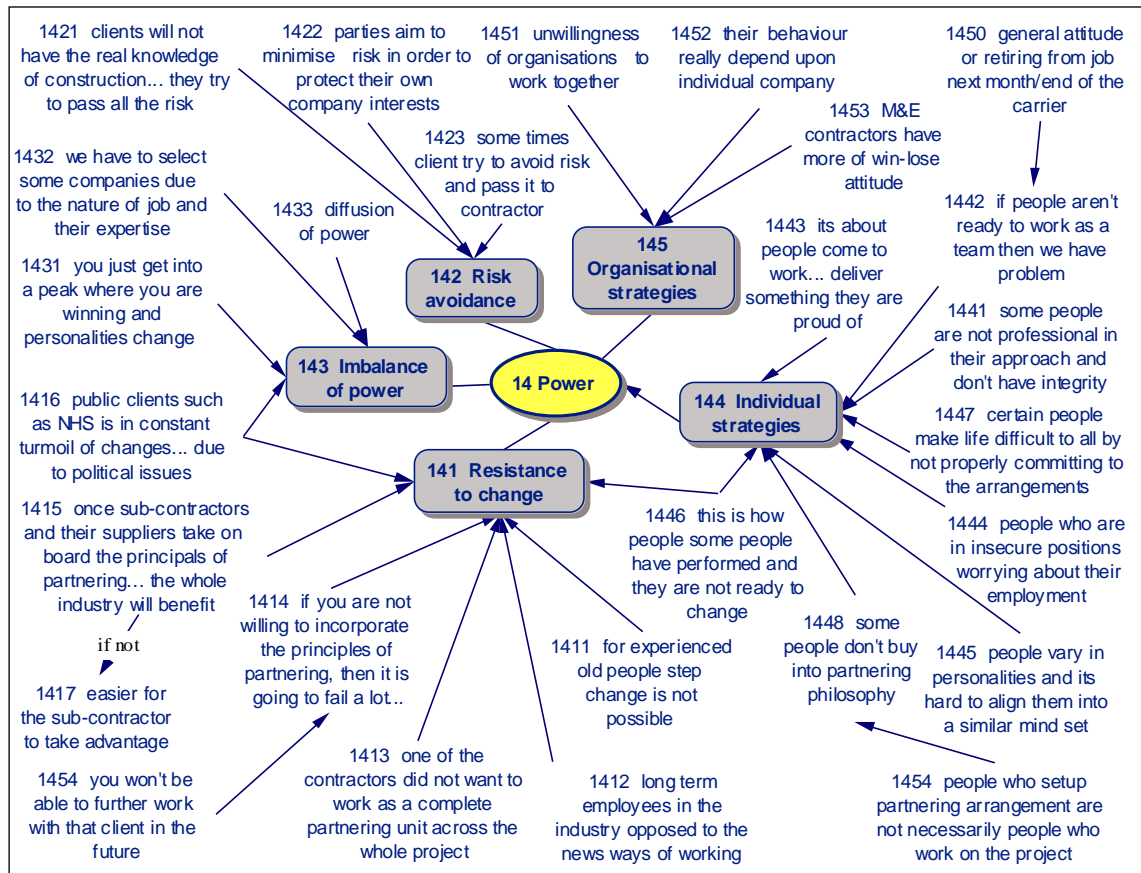


Figure 4-20: Industry experts' cognitive map of power related challenges

Similarly, experts also pointed out organisational strategies (145) as a challenge in construction partnering projects. While IP06 stated an unwillingness of organisations to work together (1451), IP07 mentioned that the reason for the ill behaviour of parties root from their own companies and its difficulties to change (1452). IP10 talked about large mechanical and electrical subcontractors and stated that, “mechanical and electrical subcontractors have the highest scope, variation and major impact on projects; hospitals are more about mechanical and electrical services and sometimes you try to understand this situation; but they take it too far (1453)”.

Experts considered resistance and unwillingness to change as a barrier in implementing a partnering philosophy within projects (141). IP03, IP06 and IP09 talked about experienced industry practitioners and pointed out their difficulties to achieve step change (1411 and

1412). IP07 stated that, *“it’s hard to change people’s view when they have worked like this in the industry for a long time (1417)”*. IP01 mentioned one of the contractors and their unwillingness to work as a complete partnering unit across an entire project (1413). IP02 shifted the ‘need to change’ towards subcontractors and mentioned that, *“subcontractors don’t take partnering on board, while the main contractor and the client are trying to be open and trying to solve problems, it’s easier for the subcontractors to take advantage; this will undo all the things partnering is doing (1415 and 1417)”*. According to IP05, large clients such as the NHS are wary of change because government has used them as a political tool (1416). IP02 declared the need to change towards partnering ways and went on to state that, *“if you are not willing to incorporate the principles of partnering, then it is going to fail a lot; you might make lot of money in that particular project, but at the end of the day, if the Client sees you as not acting fair, they might also become aggressive and it might cause conflict and you won’t be able to get further work with that client in the future (1414 and 1454)”*.

Several experts pointed out the clients’ risk avoidance as a cultural and behavioural challenge in construction partnering projects. IP01 and IP02 stated that this could be down to the lack of experience and agreed with this notion from clients (1423). Similarly, IP05 stated that *“clients will not have the real knowledge of construction; basically somebody needs to guide the client to pass all the risk; sometimes it boils down to the issue of honesty (1421)”*. In addition, IP08 talked about parties to the partnering contract and their aim to minimise risk in order to protect their own company interests (1422).

IP05 considered trust building as a struggle of power between parties. He pointed out that *“depending on situations, personalities change and it requires constant building of trust, and there will always be that one step further to go (1431)”*. IP07 and IP10 mentioned the selection of certain companies due to the nature of work, even though they add more to the internal power struggle within projects (1432). IP02 indicated the need to diffuse power to relevant parties and stated that, *“if the client’s project manager doesn’t delegate a certain amount of responsibility and decision making to the main contractor, it is going to be a problem; if the main contractor feels like the client isn’t trusting them they might cause conflicts and disputes (1433)”*.

4.3.2.6 Organisational structures

Figure 4-21 provides organisational structure related cultural and behavioural challenges in construction partnering. The root causes of this challenge is analysed and represented in this cognitive map.

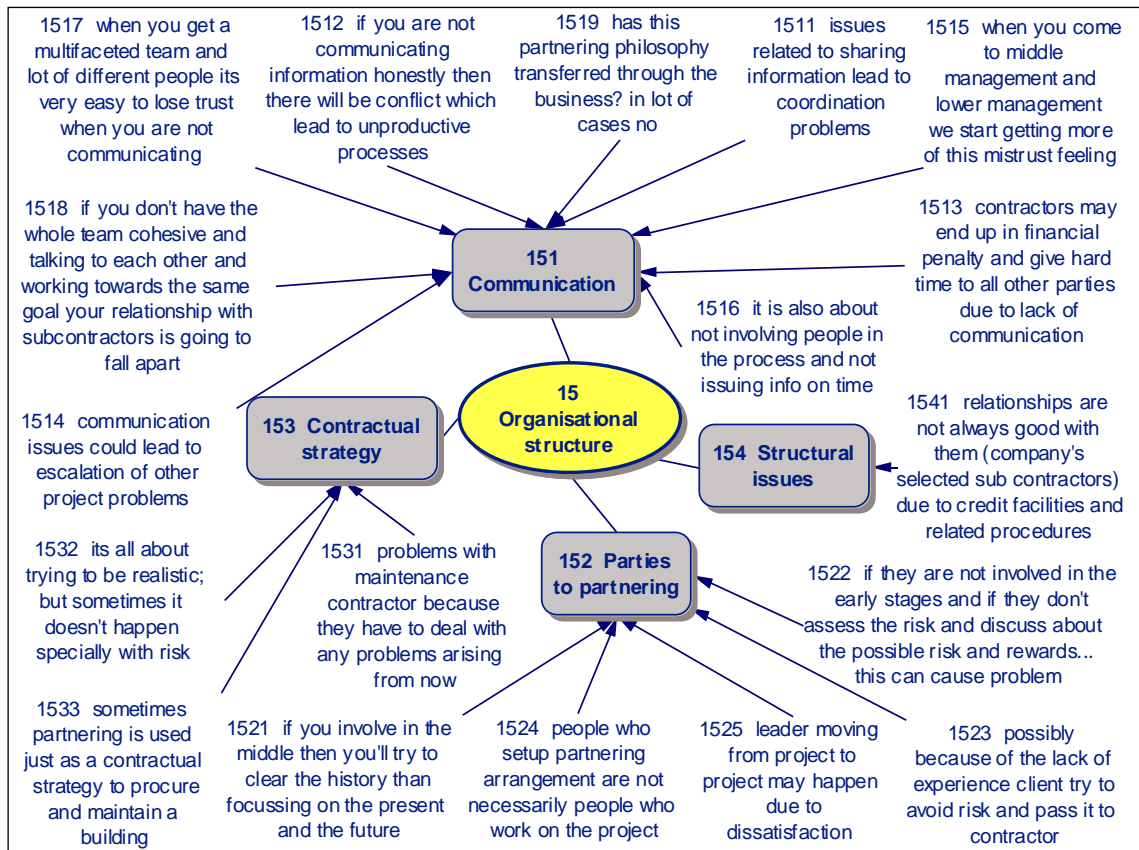


Figure 4-21: Cognitive map of industry experts' perspective on organisational structures related challenges

Industry experts emphasised several communication related challenges (151) in partnering arrangements. While IP07 noted that information sharing issues could lead to coordination problems (1511), IP02 pointed out that if information is not communicated honestly, it could lead to unproductive processes (1512). IP02 went on to state that, *“the whole point of partnering is about understanding and helping each other; there should be some sort of resolution rather than causing more problems and conflicts; so, to a certain extent, if the program is starting to slip slightly it's important to get involved and get a meeting and discuss where to resurrect and resolve it, rather than giving a hard time and ending up in financial penalty (1513)”*. IP01 indicated that communication issues could lead to escalation of other project problems (1514). Similarly, IP10 stated that in a multifaceted

team it is very easy to lose trust when appropriate communication is not performed (1517). IP07 questioned, *“Has this partnering philosophy transferred through the business? In a lot of cases, no”*, indicating a breakdown of communication in the organisational hierarchy. Correspondingly, IP05 stated, *“you must continuously build on the trust aspects to get everybody to buy in and that is critical; it is also critical to get the chief executive officers buying in from both the public and private sector, and leave them to disseminate down to director levels; however, when we come to middle management and lower management we start getting more of this mistrust feeling (1515)”*. Experts talked about involving parties in the communication process (1516). IP07 stated that, *“if you don't have the whole team cohesive and talking to each other, and working towards the same goal, your relationship with subcontractors is going to fall apart (1518)”*.

Several experts identified engagement of parties to the partnering contract at various stages of the project as a root cause for various challenges. IP09 and IP05 declared that when an employee engages in the middle of a project, he/she will try to clear the history rather than focussing on the present and the future (1521). IP07 affirmed this notion (1522). Similarly IP06 stated that, *“people who setup partnering arrangement are not necessarily people who work on the project (1524)”*. IP02 noted issues with less experienced clients. He went on to state that, *“sometimes clients try to avoid risk and pass it to contractors, possibly down to the lack of experience and I think it's a very wise move for a client who isn't so clued up (1523)”*. IP05 talked about an instance where leaders move from project to project due to dissatisfaction and went on to mention that, *“It's also important to be open as a leader so that when a person moves, another person can take it and follow (1525)”*.

In several cases partnering is used just as a contractual strategy to procure and maintain a building. Experts expressed that the partnering philosophy has been overlooked in this type of case (1533). A similar notion was expressed by IP07. He went on to state that, *“it is all about how the contracts are arranged; it's all about being realistic and comfortable in taking the risk; in the end all of us are here to make money so it's about sharing that fairly (1532)”*. IP10 talked about structural issues and pointed out a weakened relationship with the company's selected subcontractors due to credit facilities and related procedures (1541).

4.3.2.7 Controls

The cognitive map in Figure 4-22 shows an analysis of the control related cultural and behavioural challenges in construction partnering projects.

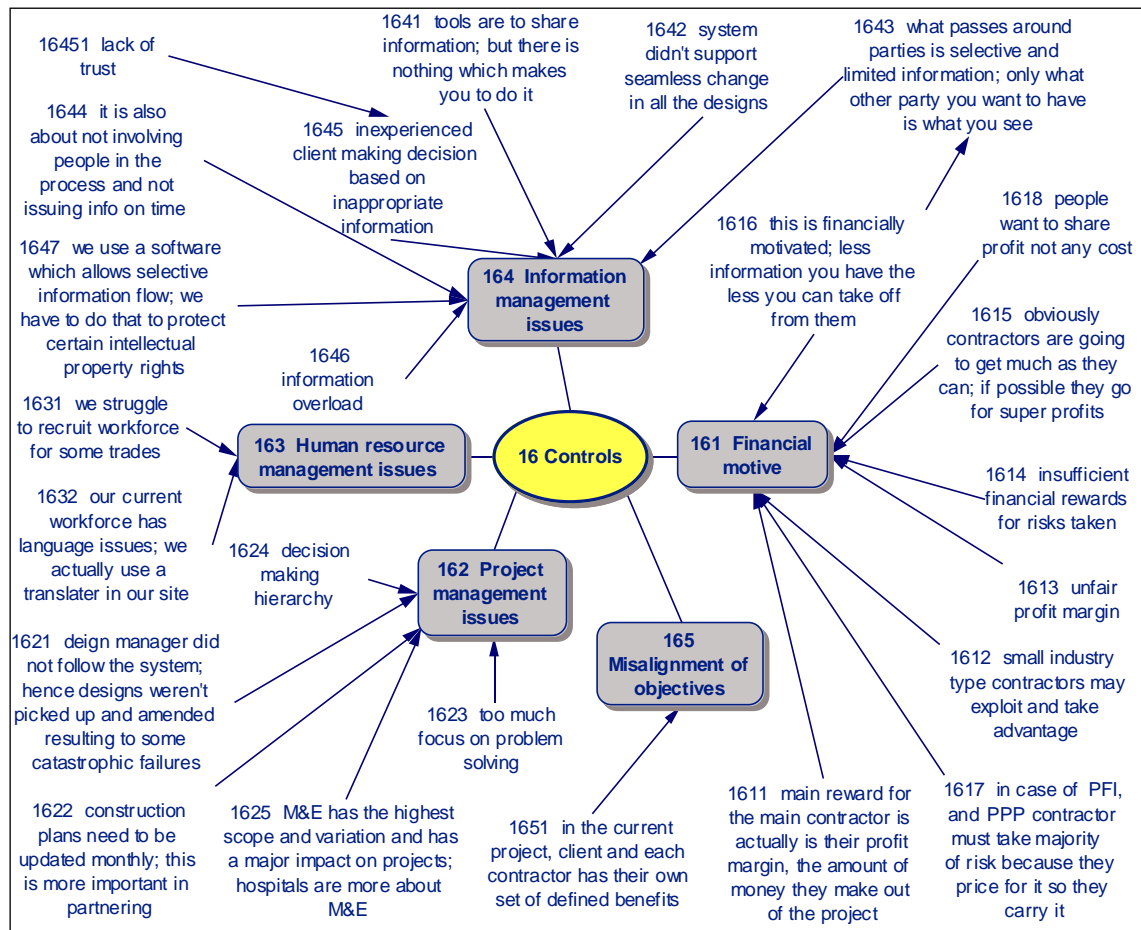


Figure 4-22: Cognitive map of industry experts' perspective on controls related challenges

Financial motive related challenges were expressed by several industry experts (161). IPO2 stated that the reward for the main contractor is their profit margin, indicating a short term financial motive (1611). He also went on to point out an unfair profit margin set out by some of the contractors (1613). A similar notion was expressed by IP01, who went on to state that contractors may seek super profits, if possible (1615). IP05 explained about profit margins in PFI and PPP projects and stated that, *“the contractor must take the majority of the risk because they price for it, so they carry it; in London contractors have charged 70% for risk; if they can make quality and timely deliveries then they can make a good profit (1617)”*. However, IP10 was not confident regarding sharing of risks and rewards. He mentioned that *“people want to share profit, not any cost (1618)”*.

Experts indicated several project management related issues. According to IP10, it is more important in partnering to update construction plans due to the nature of an integrated/collaborative team approach (1622). IP07 recalled an incident where, *“the design manager did not follow the system; hence designs weren't picked up and amended, resulting in some catastrophic failures (1621)”*. While IP02 indicated that there was too much attention on problem solving (1623), IP07 mentioned a decision making hierarchy in partnering projects (1624). He went on to explain about mechanical and electrical services and stated, *“Mechanical and electrical services has the highest scope and variation, and has a major impact on projects; hospitals are more about mechanical and electrical services (1625)”*.

According to IP10, there were issues in recruiting a suitable workforce for certain trades (1631). IP07 mentioned a multicultural workforce within his site and talked about the necessity to translate some of the verbal instructions (1632). In addition, IP09 spoke about a misalignment of objectives (165) and stated that, *“in the current project, the client and each contractor has their own set of defined benefits; this causes trouble between contractors as they solely look for what they have to do (1651)”*, indicating the need to have common goals in partnering projects.

Several experts pointed out the challenges related to information management. However, most of these were general construction project related issues. IP01 stated that, *“what passes around parties is selective and limited information; only what the other party want you to see (1643)”*. IP06 confirmed a similar approach and mentioned that they use software which allows selective information flow to protect certain intellectual property rights (1647). IP02, IP07 and IP09 mentioned information overload (1646). They indicated that governance reporting and maintaining a client's KPIs could cause information overload, especially in larger scale projects (1646).

4.3.2.8 The paradigm

The cognitive map in Figure 4-23 shows an analysis of the paradigm related cultural and behavioural challenges in construction partnering projects.

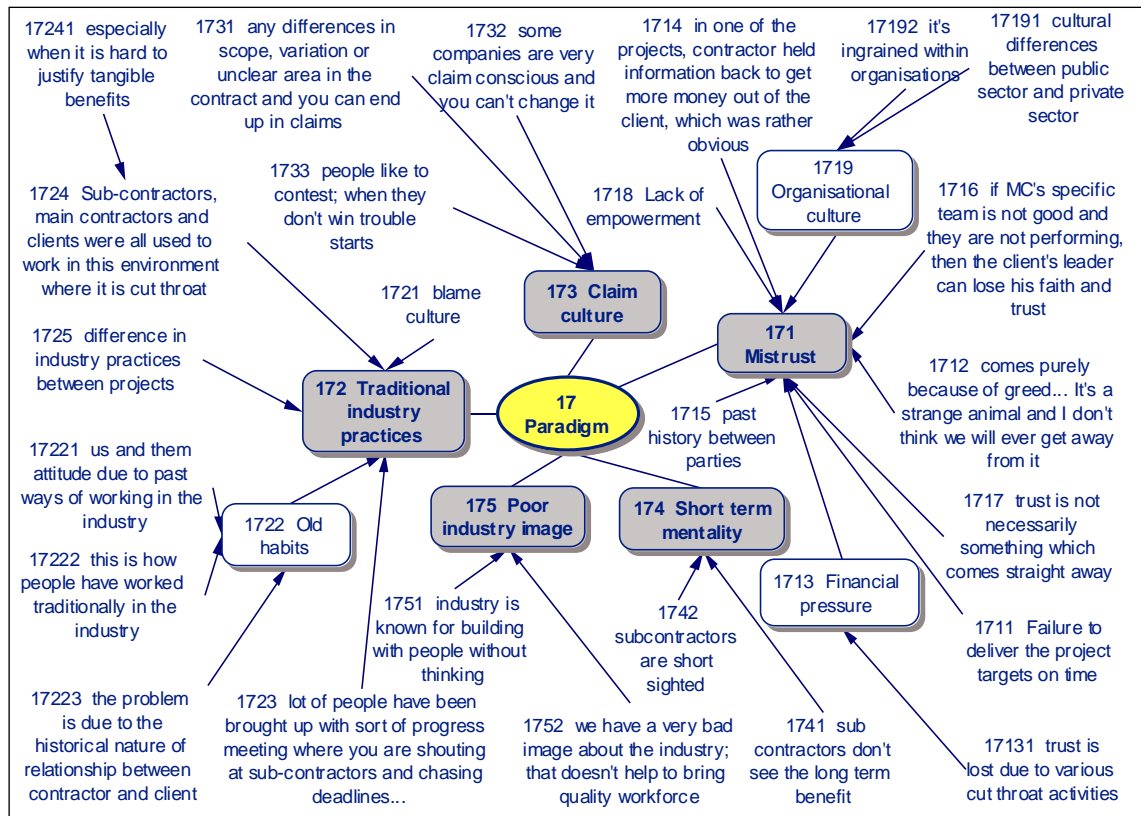


Figure 4-23: Cognitive map of industry experts’ perspective on paradigm related challenges

Several experts recognised mistrust as a major root cause for cultural and behavioural challenges in construction partnering projects (171). IP07 talked about building trust via timely deliveries and its effect when a partial handover is not achieved (1711). IP02 affirmed this notion and went on to mention that, “*if the main contractor’s specific team is not good and they aren’t performing, then the client’s leader can lose his faith and trust (1716)*”. IP05 viewed various trust related issues as a result of greed (1712). Similarly, several experts perceived financial pressures and solely profit focussed activities to cause mistrust between the parties involved (1713 and 17131). IP06 recalled an incident and stated that, “*in one of the projects, the contractor held information back to get more money out of the client, which was rather obvious; this could ruin relationships (1714)*”. IP08, IP06 and IP09 considered past history and previous experience as the causes for mistrust (1715). Experts also expressed the notion that trust is built over a project or several projects (1717). However they accepted that it would improve gradually if matters are handled appropriately. IP02 noted that empowerment could improve trust between the parties involved (1718). IP05, IP06 and IP08 considered organisational culture to play a vital role within partnering projects, especially in short term projects (1719 and 17192).

IP05 specifically pointed out the cultural differences between the public and private sector (17191).

Experts also perceived traditional industry practices (172) as a major challenge to the partnering philosophy. IP05 and IP10 pointed out a blame culture in the industry. IP05 stated that, *“if we are going to partner then we need to accept responsibility that mistakes are joint mistakes; sometimes people are scared so they hide problems (1721)”*. Several parties mentioned continuation of old habits (1722) to cause a ‘them and us culture’ between parties (17221, 17222 and 17223). IP01 went on to state that, *“the problem is due to the historical nature of the relationship between the contractor and client; contractors are stuck in the old habits and the client never knows how to get around it; it’s also about contractors’ attitudes in taking risks (17223)”*. IP02 considered the problem from the contractor’s perspective and noted that, *“a lot of people have been brought up with sort of progress meeting where you are shouting at sub-contractors and chasing deadlines (1723)”*. Similarly, IP08 and IP09 pointed out a cutthroat behaviour between subcontractors, main contractors and clients (1724 and 17241). Furthermore, IP02 talked about the difficulties in changing cultures from project to project, as some of them were collaborative and others were adversarial (1725).

IP07, IP10 and IP09 spoke of the traditional claim culture within partnering projects. IP10 stated that, *“subcontractors agree for prices to be competitive in the market; but any differences in scope, variation or an unclear area in the contract and you can end up in claims; mechanical and electrical contractors start their claim account from day one; hence, you end-up with more commercial managers on the job (1731)”*. A similar notion was expressed by IP07 and he went on to provide various examples within his project. IP09 took a general view and stated that, *“people like to contest and when they don’t win, trouble starts (1733)”*. IP02, IP08 and IP09 talked about the short term mentality (174, 1741 and 1742) of subcontractors and IP02 mentioned that, *“subcontractors are immediate on what they want, rewards sort of things, while the main contractor might be inclined to see a long term view; sub-contractors are short sighted (1742)”*. According to IP05 and IP08, a poor industry image does not help to bring a quality workforce (175 and 1752). IP05 stated that, *“industry is known for building with people without thinking; we have to change to builders with common sense from hairy backside builders (1751)”*.

4.3.3 Cultural and behavioural challenges and its root causes: experts' ranking

During the expert interviews, together with the qualitative survey interviews, impact scales were introduced to understand the severity of cultural and behavioural challenges, and its root causes. A simple descriptive analysis was performed to rank 8 major challenges identified initially via the systematic review method.

Table 4-6: Ranking of cultural and behavioural challenges identified from systematic review

Cultural and behavioural challenges identified from systematic review	Academic	Industry	Overall		
	Mean	Mean	Mean	Std. Dev.	Rank
Lack of continuous and open communication	4.7	4.4	4.55	0.60	1
Win-lose attitude	4.9	3.6	4.25	0.91	2
Mistrust	4	4.2	4.1	0.91	3
Improper sharing of risk and rewards	4.4	3.6	4	0.86	4
Lack of commitment	3.7	3.8	3.75	0.91	5
Reluctance to change to an integrating culture	3.3	3.5	3.4	1.05	6
Poor understanding of partnering concept	3.6	3.2	3.4	1.35	6
Inefficient problem solving and continuous improvement	2.6	3.48	2.7	0.92	8

Table 4-6 presents a ranking of cultural and behavioural challenges identified from the systematic review. This study found agreement among academic and industry experts regarding the most and least perceived challenges. Experts assessed the lack of open communication, a win-lose attitude and mistrust, as highly expected challenges. It is also found that mistrust, traditional industry practices, individual strategies, poor partnering understanding and resistance to change were expressed frequently as the root causes of cultural and behavioural challenges. These are central to the partnering philosophy and it confirms the current issues within partnering projects. Hence, to achieve the benefits of partnering, it is an imperative to address these challenges. Even though the rankings were not used for the entire study, they were useful in triangulating the qualitative findings from the expert interviews. Furthermore, they support findings from literature synthesis and systematic review.

4.4 Summary and link

This chapter presented cultural and behavioural challenges, and its root causes in construction partnering projects. 48 cultural and behavioural challenges were identified via a systematic review and categorised into 8 key areas: improper sharing of risk and rewards, inefficient problem solving and continuous improvement, lack of commitment, lack of continuous and open communication, mistrust, poor understanding of the partnering concept, a reluctance to change to an integrating culture and a win-lose attitude. Based on these areas of challenges, experts' opinion on its root causes were collected and analysed. To understand the current research standpoint and practical issues, experts were selected from academia and industry. This chapter presents challenges and root causes as 7 categories of analysis based on the concepts of the cultural web: rituals and routine, stories, symbols, power, organisational structure, control systems, and paradigm. Findings from this chapter are presented in Section 6.2 of Chapter 6. Research found mistrust, traditional industry practices, various individual strategies, poor partnering understanding and resistance to change as the commonly held root cause of cultural and behavioural challenges in construction partnering projects. These findings reaffirm the construction industry's need to continue to tackle challenges and issues identified from various industry commissioned reports (Latham, 1994; Bennett *et al.*, 1996; Egan, 1998; Fairclough, 2002; Strategic forum for construction, 2002; DTI, 2006; Construction Excellence, 2008; Wolstenholme, 2009).

These findings also show that it is essential for partnering projects to achieve change in cultural and behavioural characteristics towards mutual trust and understanding. Therefore, it is essential to bring about cultural change, which encourages project participants to transgress conflicting interests and to build a shared culture. Leadership is seen as the source of beliefs and values that forms shared assumptions of organisational culture (Denison, 1996; George *et al.*, 1999; Schein, 2004). Hence, the next chapter constructs an integrated refined leadership framework to address cultural and behavioural challenges in construction partnering projects.

CHAPTER 5 DATA ANALYSIS: LEADERSHIP PRACTICES TO ADDRESS CULTURAL & BEHAVIOURAL CHALLENGES

5.1 Introduction

This chapter presents the research analysis and findings on leadership practices to address cultural and behavioural challenges in construction partnering projects. It focuses on using evidence from expert opinions and case studies to develop and refine the theoretical leadership framework (refer to Section 2.5 of Chapter 2).

Firstly, the results from the content analysis of experts' opinion are presented. Both academic and industry experts' perspectives on leadership practices to address cultural and behavioural challenges are categorised and represented as embedding and reinforcement mechanisms according to the theoretical leadership framework established in Chapter 2. Focused and axial coding techniques are used to identify new leadership practice areas from experts' opinion. Secondly, the results from the content analysis of case study data are presented. Case studies are individually analysed using open, focused and axial coding. These case study analyses are presented in categories of initial embedding, continuous embedding and reinforcement mechanisms.

Thirdly, a cross case analysis is presented to form the refined set of leadership practice areas and leadership practices. These practices are then evaluated against the initial findings from the expert opinion to form the final list of initial embedding, continuous embedding and reinforcement mechanisms that make the final consolidated framework of integrated leadership practices. Finally the analysis of empirical evidence is summarised.

5.2 Data analysis and findings - Expert interviews

Schein, a seminal author in the area of leadership and culture, proposed a leadership behaviour model to illustrate various mechanisms for cultural change. According to Schein (2004), primary embedding mechanisms and secondary reinforcement mechanisms

are used by leaders to embed their beliefs, values and assumptions. As discussed in Section 6.2 of Chapter 6, cultural and behavioural challenges were analysed in alignment with the concept of the ‘cultural web’. The proposed theoretical leadership framework (refer to Section 2.5 of Chapter 2 for further details) was used to capture leadership practices that address cultural and behavioural challenges in construction partnering projects.

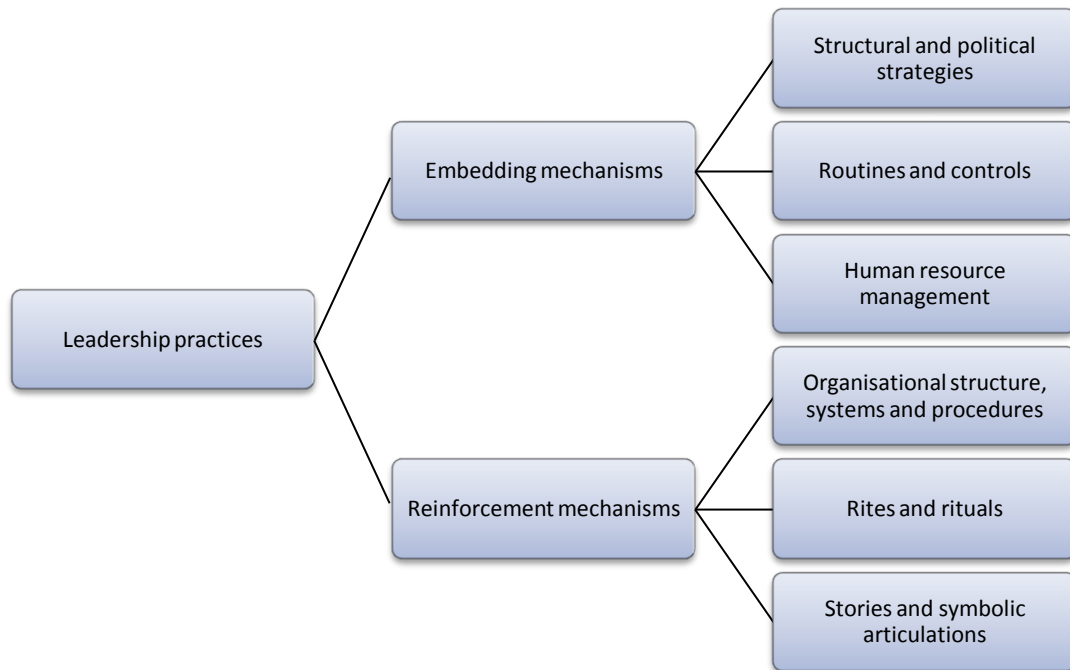


Figure 5-1: Theoretical framework of leadership to address cultural and behavioural challenges

Data analysis was conducted using a priori/deductive coding technique to categorise themes and concepts into the proposed theoretical framework. After the initial open coding into the embedding and reinforcement mechanisms, focused coding was performed to create leadership practices under these categories. A further stage of axial coding was carried out to shape leadership practice areas under each category proposed in the theoretical framework.

5.2.1 Background information to expert interviews

The first phase of empirical investigations on leadership practices to address cultural and behavioural challenges was carried out via expert interviews. 20 experts in construction partnering from built environment education and the construction industry were selected and interviewed for this study (refer to Section 3.5.1.2 of Chapter 3 for more details about

the semi-structured interview respondents). A combination of purposive sampling methods, expert sampling and snowball sampling was adopted to select these experts (Singh, 2007; Babbie, 2010). Since Egan's seminal report on 'Rethinking Construction' in 1998, the philosophy of partnering was energised within the academic community and among industry practitioners. The 'Accelerating Change' report in 2002 (Strategic forum for construction), presented a progress map on rethinking construction philosophies. Using this date as a significant milestone, experts with a minimum of 5 years research and/or practical experience, by 2007, were selected for this study.

5.2.2 Analysis of expert interviews

5.2.2.1 Embedding mechanisms

5.2.2.1.1 Structural and political strategies

The cognitive map shown in Figure 5-2 represents experts' opinion on leadership practices on organisational planning, structure and politics related areas. To create a borderless project entity (311), get the employees to buy-in (322), getting early involvement of parties (313), having pre-start deliberations (314), having cultural alignment of parties (315), having a team approach (316) and having a balance of power were all identified as major leadership practices in this area.

According to AE04 and AE10, the creation of a borderless project entity (311) could improve team integration and tackle major root causes. AE10 suggested creating a project organisation that is more significant than the affiliation of individual members back to their parent organisations (3111). Several industry and academic experts noted the importance of employee buy-in (312) to the partnering and collaborative working concepts. AE07, AE10 and IP07 pointed out the role of leadership in selling the vision. AE07 went on to say, "*this needs to be on factual terms rather than selling like a marketing exercise; so, any leader would have to be able to identify different people to try and sell it in different ways; inevitably that would be done in various levels and you would hope that different strategies would meet people's requirements (3122)*". This indicates a democratic way of bringing all the parties to the partnering project by selling the collaborative concepts.

Several academic and industry experts noted that the early involvement of parties to the partnering contract (313) is vital to project success. IP02, IP04 and IP05 emphasised the central role of project leadership early in the project (3132). IP02 went on to state, *“In the design stage you need to allocate appropriate risk and accept the rewards. I think it is important for the client to be involved earlier before the construction stage in the design stage and to have the flow of information throughout the project (31321)”*. According to IP03 and AE01, it is important to bring all parties together early in the process to determine requirements (31311 and 313111). IP05 indicated the necessity to have more discussions in the development stage (31312). However, IP02 pointed out the difficulties in bringing all subcontractors together at the same time and suggested that major subcontractors would be more likely to do this (313112).

According to AE04, there are more benefits from better pre-start deliberations (314). He pointed out that, *“...additional ground work in establishing a partnering regime, defining how the partnering charter will work, how the partnering will work in practice, how the dispute mechanism will be implemented and how disputes will be escalated up the decision making chain; all of that will benefit the entire project (3141 and 31411)”*. AE08 and IP09 indicated the importance of engaging stakeholders to make sure that every party knows what they are getting out of the partnering project (3142 and 31421). IP09 proposed that, *“once people are brought in and other parties are selected to the project, they have to come on board and sign-up to this win-win mutual benefit climate”*. AE04 also pointed out tools which can be used to provide partnering understanding (3143 and 31431). Effective partnering workshops and partnering showers were used before the start to describe partnering concepts to everyone associated with the project. Importantly, several experts indicated the vital role in forming exact contracts (3144) to tackle cultural and behavioural challenges and to improve collaborative working. AE04 pointed out, *“It goes down to the setting up at the very beginning. I don't think you can establish a win-win attitude once you have got the contract in place, because the contract defines the obligations. All you need to do is to define the partnering win-win culture before you place the contract so that the win-win culture becomes the part of contractual obligations (31441)”*. This notion was verified by AE02, AE08 and AE10. AE05 talked about the role of project leader in setting-up the partnering conditions (31442). However, he recognised the limitations in bringing the project manager before the contract and providing access to

the formation of the conditions of contract. This was affirmed by IP01 and IP10. According to AE04, the other important prestart deliberation is an appropriate allocation of risk (3145) and identification of risk and rewards pre-contract (31452). AE06 proposed the idea of a negotiated risk register so that both parties construct the risks register together and agree to undertake the identified risks (31452).

According to AE05, it is vital to pay significant attention to cultural alignment of parties (315 and 3151). IP03 proposed promoting partnering as a new way of working (3152). IP02 and IP07 mentioned that they normally choose from a selected list of subcontractors and suppliers whom they know and have worked with previously. IP09 and AE01 stated that the potential to talk to the supply chain early in the project to understand them and their company is of benefit (3154). AE05, IP02, IP04 and IP06 proposed a team approach to manage partnering contracts (316). While AE05 urged to provide equal status to partnering parties (3161), AE02 suggested creating collaborative relationships between parties to the partnering contract (3163). IP02 indicated the benefits of team working and mentioned that, *“leaders need to show that their view is focused towards partnering and this will definitely affect the main contractor's team working (3162)”*.

Experts viewed balance of power (317) as a political strategy to tackle power related cultural and behavioural challenges. AE03 considered implementing authority to all the parties of the project to encourage openness (3171 and 31711). Besides, AE01, AE05 and IP09 urged that partnering parties should be provided with equal benefits (3172 and 31722). AE05 advocated this notion of equal benefits by stating that, *“creating a condition in which every participant can benefit from the project and offset any abuse of power anyone thought to practice (31721)”*. In addition, AE03 and AE05 suggested ‘bouncing out’ any excessive power within the project hierarchy (3173) to balance power between project participants. For example, AE05 highlighted a need to, *“encourage the openness and sense of mutual trust and mutual respect among parties, and seek to bounce out any excessive or distorted power which may rise in the hierarchical structure of the projects (31731)”*. IP07 and IP10 proposed to empower parties and bring them together (3174 and 31742). Similarly, IP02 suggested showing willingness to let other people make decisions, but continue to provide input (31741). AE07 and AE10 emphasised the importance of negotiations and persuasion (3175) in managing power related issues with a

partnering project. AE10 mentioned that, *“it is important make sure that other party take something away from it. Find the correct compromise position; rather than trying to maximise profit in a short term (31751)”*. A similar notion was echoed by AE07 who highlighted the abilities of a leader to communicate, persuade, motivate and act as a conduit to represent parties (31751). According to IP01, IP07 and IP10, bringing in another specialist in areas such as innovative design and construction could get parties talking together (3176). IP01 went on to suggest the need to, *“bring in another specialist; get them talking together and create success to reinforce collaborative working relationships; later they will automatically meet together to discuss matters (31761)”*.

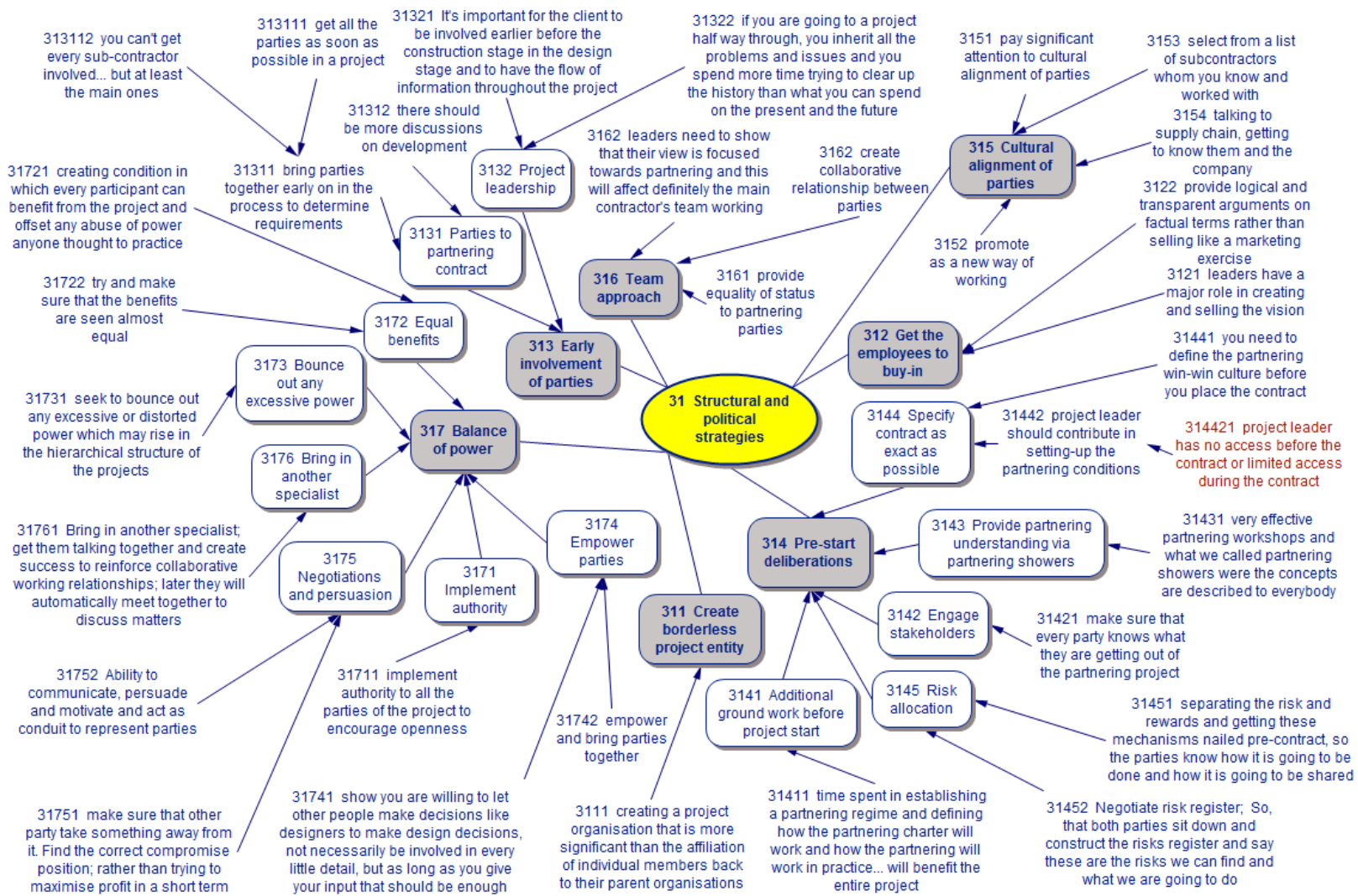


Figure 5-2: Cognitive map of experts' perspective on leadership practices related to structural and political strategies

5.2.2.1.2 Routines and controls

The cognitive map shown in Figure 5-3 represents routine and control related leadership practices in construction partnering projects.

Several experts pointed out the importance of proactive communication with the supply chain (321). AE01, IP05 and IP09 indicated the need for the client's proactive engagement with the supply chain. AE01 went on to state that, *"only when you get the feedback from them, you begin to understand the issues about their business environment and their context (3211)"*. As per IP09, it is important to integrate all the parties to understand what they want from the project and what they can and cannot cope with (3212). IP02 considered the potential to engage the entire supply chain and mentioned a need to, *"engage the full supply chain; lots of design team meetings go on with the client and maybe consultants, structural engineers, the architects, but not so much further down the supply chain, which could be a good idea (3213)"*.

According to AE06, communication should be systemised to improve information flow (322). IP02 indicated that it is important to be receptive to employee comments (3221) and more democratic opposed to autocratic, especially when it comes to communications with clients. He went on to state, *"especially for clients; they may be not specialist as the main contractor in certain issues but it's important to listen to their point of view (32211)"*. IP01 and IP04 mentioned a similar notion: a need to improve communication with the client. IP08 insisted on improving communication down the supply chain (3222) and went on to recognise that, *"it needs to be passed down to the supply chain to the main contractor, sub-contractors and even their suppliers; down the supply chain, people may not be aware of the benefits or may not be receiving the benefits. I think leaders should make sure all the people are aware and not in the dark about benefits (32221)"*. AE01, AE02, AE05 and AE10 pointed out the role of leaders in facilitating communication (3223 and 32231) and soliciting feedback from various parties to share information (32232).

Interlinked with communication (322), information sharing (3231) was considered by experts as one of the integral parts of partnering ideology. Maintaining a high level of

transparency (3231) and keeping the right flow of information (3232) emerged as important leadership activities for sharing information. AE01, AE02 and AE10 suggested open book accounting and open reward systems to share information between parties (32311). IP05 described how they opened their maintenance log book for other parties to review (32312) and indicated that the private sector must open up first as the public sector was designed and has operated as a relatively closed system (32313). IP03 said that, *“you need to be completely open from the start with other parties and create an open book environment to promote information sharing (32313)”*. AE05 mentioned a need to ensure that there is a proper flow of information and for people to understand the benefits that will result from this (3232 and 32321). AE01 supported this notion and went on to stress that it is important to, *“intervene if some parties are not sharing their information and perhaps keeping certain issues to themselves and preventing others from planning their work properly (32322)”*.

IP03 expressed the necessity to show partnering benefits to all the parties (324) using experienced professionals. He went on to indicate, *“the NHS got a salaried member of staff on their books who is a project manager and worked on a few partnering jobs. They use him to influence ways of partnering and to get them on board, and really like showing the benefits of partnering (3243)”*. IP05 and IP08 also supported this notion (3241 and 3242).

From the expert interviews it emerged that appropriate risk allocation and sharing is vital for the success of partnering (325). AE03, AE05 and IP09 expressed that sharing risk is for the betterment of every party to the contract (32512). AE05 highlighted that, *“leaders need the ability to recognise where the risk is not appropriately distributed and to be able to make that adjustment (32511)”*. AE07, IP03 and IP06 suggested efficient risk identification and analysis to allow all parties to buy into appropriate risks (3252 and 32522). Similarly, IP03 recommended to carefully identify risks before allocating (32521) and mentioned instances where the project team discovered risks during the construction stage, which were not in the risk matrix.

Several experts maintained that the allocation of resources and rewards (326) has a major role in encouraging an integrated culture within partnering projects. AE01 noted security of work as a long term reward and went on to state that, *“they may be able to*

offer long-term continuation of work; also being able to offer integrated teams and parties that work on a series of projects is obviously very important (32612)”. AE10 pointed toward financial planning and controls, and the process of renewal of contracts (32611). Several experts suggested providing short term as well as long term benefits (3262 and 32621). For example, AE02 and AE09 suggested rewards via cost saving as a means to encourage collaborative behaviour (32622).

Experts also pointed out various project management principles (327) related to routine activities. AE04 and AE02 proposed reducing defects (3271) using Kaizen and lean principles. AE04 went on to state that, *“we need a psychological stop button where anybody on site has the power to press the button and stop work on site because they can see a problem which by being incorporated will be made worse by carrying on (32711)”*. He also pointed out the importance of managing construction waste and suggested seeking out an optimising solution rather than a satisfying solution (3272, 32721 and 32722). AE07 recommended managing projects through measuring performance against set targets to make sure that parties in a partnering contract work towards the project goals (3273 and 32731).



Figure 5-3: Cognitive map of experts' perspective on leadership practices related to routines and controls

5.2.2.1.3 Human resource management

The cognitive map shown in Figure 5-4 represents experts' opinion on human resource related leadership practices. The use of personal motivational constructs (331), leadership qualities (332), collaboration and trust (333), recruitment and assimilation (334), and deliberate role modelling (335) were identified as major leadership practice areas under this category.

Experts pointed out rewards and recognition (3311) as one of the personal motivational constructs (331) for performance and to encourage sharing (33112). AE07 pointed out effective sharing of information via recognition. IP10 provided an example where a small supplier who helped to ensure health and safety within a project was acknowledged, and soon afterwards that convention was followed by fellow subcontractors (33111). AE01 and IP09 pointed toward empowerment and encouragement as personal motivational constructs to develop employees (3312 and 33121). Several experts proposed incentivising performance (3313 and 33132). Interestingly, IP02, when talking about the challenges in sharing benefits throughout the supply chain, went on to suggest that, *“maybe incentives from the client should go vertically from the main contractor to the supplier or sub-contractor; we see less of that happening and it would be good to get them involved in some of the benefits that root from the partnering program (33131)”*.

Many of the experts' human resource related leadership practices focussed on leadership qualities (332). These were primarily regarding the expected characteristics of person/s in the leadership position. AE05 declared that *“culture in many ways stems from the project leader”*. A similar notion governs this research and it is a view supported by several authors (Bennis, 1996; Sparrowe and Liden, 1997; George *et al.*, 1999; Schein, 2004; Salk and Schneider, 2009; Hartmann and Khademian, 2010). There was widespread agreement among the experts of the need to lead by example from the beginning to build trust (3321 and 33212). While IP02 and IP08 encouraged project leaders to get involved and participate in the decision making process (33211), IP04 recommended demonstrating the leader's knowledge and experience to all the parties within a project (33214). AE06 and AE07 noted that it is important to show examples of

good practice (33213). They also referred to demonstrating fair treatment, respect and support (3322). AE07 went on to advise leaders to be forthright, fair, and open and to treat people equally (33221). A holistic perception (3323) of project activities was mentioned by AE02, AE04 and IP05 as a means to effective leadership. IP05 stated that, *“as a leader you should know yourself, your subordinates, your environment and your task (33231)”*. AE07 further suggested providing a vision and clear objectives (3324), and stated that, *“provide vision; set an agenda and people will follow willingly. It is important for him to show vision and correct attitude, and how he puts himself in front of people (33241)”*. AE10 and AE03 proposed a charismatic leadership approach (3325) to encourage collaboration within partnering projects. AE10 also indicated the importance of being a visible leader (3327) and recalled an example where client leadership was far too remote. He mentioned that, *“how can it show commitment when it is invisible to the people who are working on it? Project leadership has to be very visible to all levels and that goes right the way down to trade staff (33271)”*. IP05 raised the need to be self critical (3326) and stated that, *“We open up our maintenance log book for them to review. We take on board criticisms; if we feel the criticisms are fair we will do something to change the process so everybody is getting satisfaction from it (33261)”*.

AE10 emphasised the importance of creating a level of trust for employees at all levels (333). He pointed to a need to convince all employees within a project that it is in their interest to be open and honest (3333 and 33332). Similarly, AE04 and IP01 expressed a need for honesty and trust to build relationships with people (33331). AE06, AE08 and IP02 suggested creating a win-win relationship with all parties by sharing rewards and recognition (3331 and 33311) to create trust. AE07 indicated a need to uphold the spirit of partnering, and to, *“make sure the spirit of partnering lives-on; make sure that when there is a challenge people are not hammered or castigated; risk shared is to the betterment of everybody in partnering (33321)”*. AE04 also suggested integrating all parties as a key role of the leader to uphold the spirit of partnering (33322).

Experts also indicated the importance of recruitment and assimilation (334) for the existing and new employees. AE10 stated that when a new employee comes in they should be assimilated into the new working culture (3342 and 33412). IP05 suggested to hold joint seminars to bring people together and talk about related issues (3341 and

33411). A similar notion was expressed by AE09. AE03 and AE10 proposed avoiding people with extra baggage (3343). AE10 went on to mention, *“try not to select people with extra baggage; if they come onboard, you need to realise that there may be some disruptive influence that you need get rid of; leadership has a role in filtering that (33431)”*.

Furthermore experts pointed out deliberate role modelling (335) to handle challenges and improve performance. AE01 and IP09 mentioned the importance of people in the position of leader to try and align employees’ objectives for the project and to get them facing in the same direction (3351 and 33511). AE10 went on to state that *“leaders have to adapt to different situations for different types of people; so, any leader would have to be able to identify different people to try and sell it in different ways; inevitably that would be done in various levels and you would hope that different strategies would meet people's requirements (3352 and 33521)”*. IP05 talked about various ways to manage personality conflicts (3353) and to bring people together in monthly and weekly meetings to resolve the issues (33531).



Figure 5-4: Cognitive map of experts' perspective on leadership practices related to human resource management

5.2.2.2 Reinforcement mechanisms

5.2.2.2.1 Structure, systems and procedures

The cognitive map in Figure 5-5 represents structure, systems and procedures exploited by leadership in reinforcing cultural change within construction partnering projects. According to Schein (2004), they provide predictability and structure to an otherwise vague and ambiguous process of organisational interactions. Compared to other categories experts provided less evidence regarding these mechanisms.

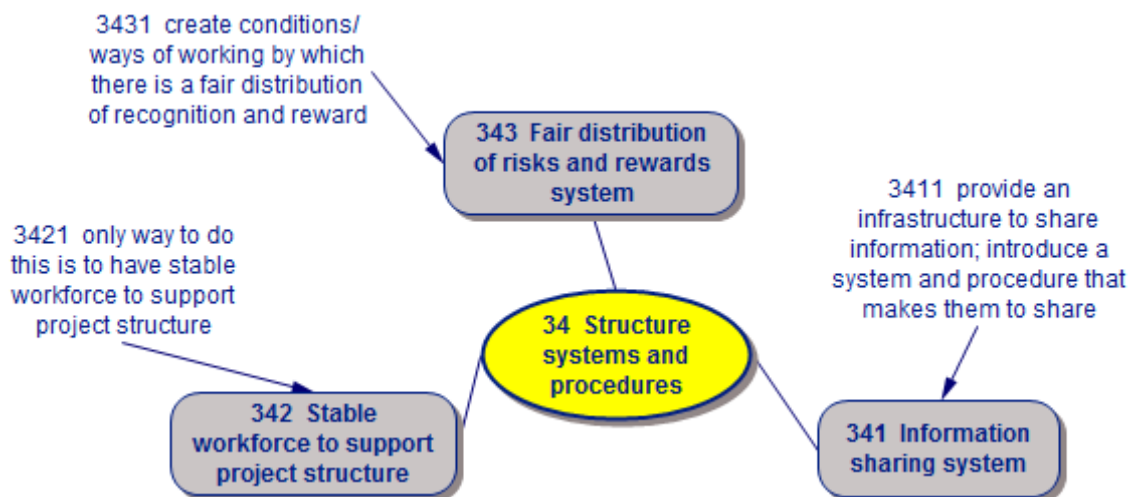


Figure 5-5: Cognitive map of experts' perspective on leadership practices related to structure, systems and procedures

However, several experts did propose an appropriate information sharing system (341) to improve collaborative working. Industry experts talked about various systems provided by universities and other major software developers to upload, share and backup information. IP07, stated that they, “*provide an infrastructure to share information; introduce a system and procedure that makes them share (3411)*”, indicating an engineered approach to sharing information between parties. Similarly, AE01, AE05 and IP09 proposed the notion of providing a fair distribution of risks and rewards (343) via a well-defined system. AE05 recommended conditions or ways of working by which there is a fair distribution of recognition and reward (3431).

Academic experts, including AE03 and AE06, revealed challenges associated with high turnover of staff. AE03 stated that, “*You need a strong and supportive project team and*

project structure. For this you need a stable workforce; otherwise every new member will require time to change to a win-win culture (3421)”. He went on to talk about continuity of staff and its impact on project and organisational structures, especially when introducing a change in working ways.

5.2.2.2.2 Rites and rituals

Schein (2004) pointed out that if leaders can ritualise accepted behaviours that are considered important, they can become powerful reinforcing mechanisms. Figure 5-6 provides rites and rituals to reinforce cultural change within construction partnering projects. Most of the qualitative evidence regarding rites and rituals came from industry experts.

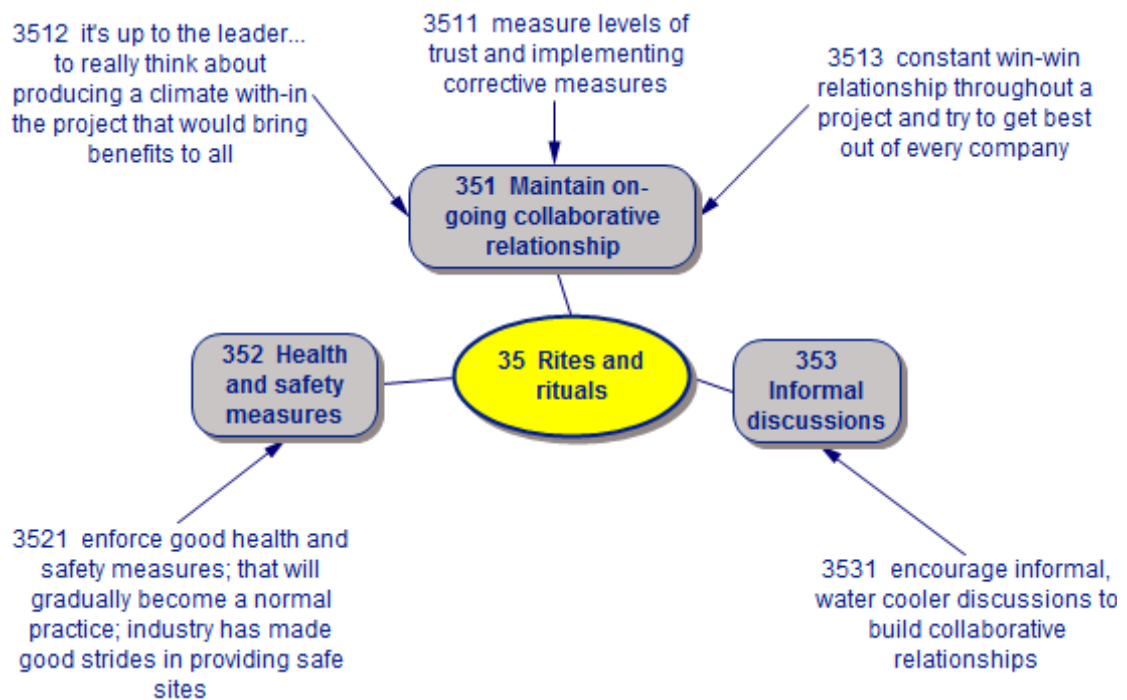


Figure 5-6: Cognitive map of experts’ perspective on leadership practices related to rites and rituals

Academic and industry experts emphasised the importance of maintaining an on-going collaborative relationship (351) within the project environment. IP08 stressed the need to develop a constant win-win relationship throughout a project in order to get the best out of every company (3513). Similarly, IP09 proposed a climate within which benefits can be shared. He went on to mention that, “It is up to the leader or the people who are in the position of responsibility where they can integrate others. They’ve got to really

think about producing a climate within the project that would bring benefits to all (3512)". AE05 suggested measuring levels of trust and if required, to implement corrective measures (3511). These provided a clear indication of the means to achieve collaborative behaviour within partnering projects.

IP07 recommended enforcing good health and safety measures that can gradually become normal practice (352 and 3521). He went to state that, "*industry has made good strides in providing safer sites*". IP01, IP07 and IP10 talked about informal discussions (353) between parties to the partnering project to resolve various construction related issues. For instance, IP10 urged to "*encourage informal, water cooler discussions to build collaborative relationships (3531)*" between project team members.

5.2.2.2.3 Stories and symbolic articulations

The cognitive map shown in Figure 5-7 represents experts' opinion on stories and symbolic articulations in partnering projects to reinforce embedding mechanisms. Office arrangements and facilities (361), strong individuals or champions (362), communication of good practices and a positive attitude (363), working environment (364) and social events were identified under this category.

According to AE10, consideration of office arrangements and facilities were required to enhance collaboration between parties (361) and went on to suggest good and equivalent facilities to all parties to a project (3612). He recalled a traditional environment and stated that, "*in a project, while the clients occupied a purpose built office, contractors were sat in site cabins; not exactly a feeling that needs to be created to promote a collaborative culture (36121)*". In addition, IP01 and IP10 suggested creating areas where informal discussions can take place (3611). IP10 noted that, "*the water cooler and photocopier places are where people talk informally and it is a good way to start communications (36111)*".

IP07 stated that, "*it is surprising how little revolves around systems and how much revolves around people; support strong individuals or champions to improve the win-win situation (3621)*". A similar notion regarding strong individuals (362) was expressed by AE08, AE10 and IP10. IP07 talked about communicating good practices

and a positive attitude, and went on to state, “*when someone performs well we publicise it; publicise examples of leadership and good practice (3621)*”. However, AE06 and AE10 expressed their concerns regarding internal publications. While AE06 suggested providing accurate information (3632), AE10 mentioned that, “*sometimes employees are cynical about this; they see through this and laugh about this behind the scenes (3633)*”.

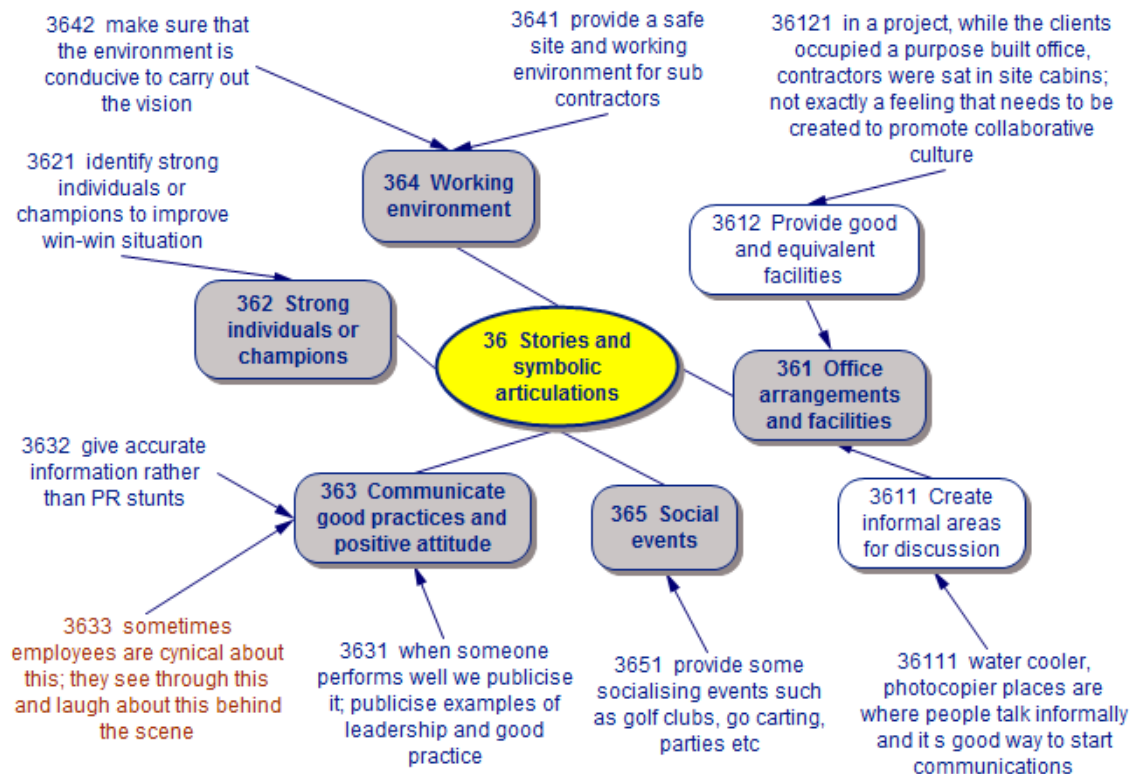


Figure 5-7: Cognitive map of experts’ perspective on leadership practices related to stories and symbolic articulations

Good working environments (364) were also considered as a symbolic articulation to reinforce a partnering philosophy. While IP07 proposed providing a safe site and working environment for sub-contractors (3641), AE07 talked about cultural and behavioural aspects, and advocated towards an environment conducive to carrying out the vision (3642). IP06, IP07 and AE09 recommended social events such as golf clubs, go- karting and parties to improve interaction between employees (365 and 3651).

5.2.3 Initial leadership framework

The following initial leadership framework (see Table 5-1 and Table 5-2) was created from the analysis carried out on expert opinion. While the main categories and underlying concepts were influenced by the theoretical framework (refer Section 2.5 of Chapter 2), leadership practice areas and leadership practices were identified from this analysis.

As discussed in the literature review (refer to Section 2.4.3), several leadership practices were proposed to tackle cultural and behavioural challenges in construction partnering projects. It is found from the above analysis that several structural and political strategies were used at the very beginning of the project (refer to Section 5.2.2.1.1). However, structural and political strategies, such as the team approach and balance of power, continued to be used throughout the project in addressing cultural and behavioural challenges. Furthermore, most of the mentioned practices provided evidence regarding leadership mechanisms in the construction phase. AE02, AE04, AE08 and IP05 were some of the few experts who provided evidence on pre-contract related practices to embed a partnering culture.

Analysis showed limited evidence regarding reinforcement mechanisms within construction partnering projects. It is understandable as the evidence was not collected from a project and most of the experts focussed on direct leadership practices to change project climate rather than shared assumptions or a project culture. These aspects will be further refined by carrying out case study research, which collects and analyses empirical evidence regarding contemporary leadership practices to address cultural and behavioural challenges. As such, the interview protocol for the case study research was designed (refer to Appendix F) from these findings to form a refined and consolidated leadership framework.

Table 5-1: Experts’ perspective on embedding leadership mechanisms to address cultural and behavioural challenges in construction partnering projects

Structural and political strategies	Routines and controls	Human resource management
<p>Create borderless project entity</p> <p>Get the employees to buy-in</p> <p>Early involvement of parties</p> <ul style="list-style-type: none"> Parties to partnering contract Project leadership <p>Pre-start deliberations</p> <ul style="list-style-type: none"> Additional ground work before project start Engage stakeholders Provide partnering showers for understanding Specify contract as exactly as possible Risk allocation <p>Cultural alignment of parties</p> <p>Team approach</p> <p>Balance of power</p> <ul style="list-style-type: none"> Implement authority Equal benefits Bounce out any excessive power Empower parties Negotiations and persuasion Bring in another specialist 	<p>Communicate proactively with the supply chain</p> <p>Systemise communication</p> <ul style="list-style-type: none"> Receptive to employee comments Communication down to the supply chain Facilitate communication <p>Promote information sharing</p> <ul style="list-style-type: none"> Maintain high level of transparency Right flow of information <p>Show the benefits of partnering</p> <p>Risk allocation and sharing</p> <ul style="list-style-type: none"> Adjust and share risk appropriately Efficient risk identification and analysis <p>Allocation of resources and rewards</p> <p>Project management principles</p> <ul style="list-style-type: none"> Reduce defects Achieve optimising solution Measure performance against targets 	<p>Use personal motivational constructs</p> <ul style="list-style-type: none"> Awards and recognition Provide empowerment and encouragement Incentivise performance <p>Leadership qualities</p> <ul style="list-style-type: none"> Lead by example Fair treatment, respect and support Holistic view Provide vision and clear objectives Charismatic leaders Self-critical Visible leader <p>Collaboration and trust</p> <ul style="list-style-type: none"> Share rewards and recognition Uphold the spirit of partnering Honest behaviour <p>Recruitment and assimilation</p> <ul style="list-style-type: none"> Encourage joint seminars and discussions Assimilation into the new working culture Avoid selection of people with extra baggage <p>Deliberate role modelling</p> <ul style="list-style-type: none"> Align people's own objectives to project goals Adapt to given situation Management of personality conflicts

Table 5-2: Experts' perspective on reinforcement leadership mechanisms to address cultural and behavioural challenges in construction partnering projects

Structure systems and procedures	Rites and rituals	Stories and symbolic articulations
<p>Information sharing system Stable workforce to support project structure Fair distribution of risks and rewards system</p>	<p>Maintain on-going collaborative relationship Health and safety measures Informal discussions</p>	<p>Office arrangements and facilities Create informal areas for discussion Provide good and equivalent facilities Strong individuals or champions Communicate good practices and positive attitude Working environment Social events</p>

5.3 Data analysis – Case studies

Data analysis for the case studies followed the initial leadership framework to address cultural and behavioural challenges in the partnering projects developed from the expert interviews. However, initial open coding with the case study interview transcripts showed a further emphasis of early stage embedding mechanisms. As mentioned in Section 5.2.3, it was observed in the expert interviews as well. However, with additional information from case studies, focused and axial coding was performed to re-examine early stage embedding mechanisms. Upon this further examination, a new category, ‘initial embedding strategies’, was generated. Considering this change, the initial leadership framework developed from the expert interviews was modified as given in Figure 5-8. This was used for the individual case study analyses and cross case analysis to capture the strategies used at the initial stages of the projects that addressed cultural and behavioural challenges throughout the project. Codes under this category were analysed to develop refined themes.

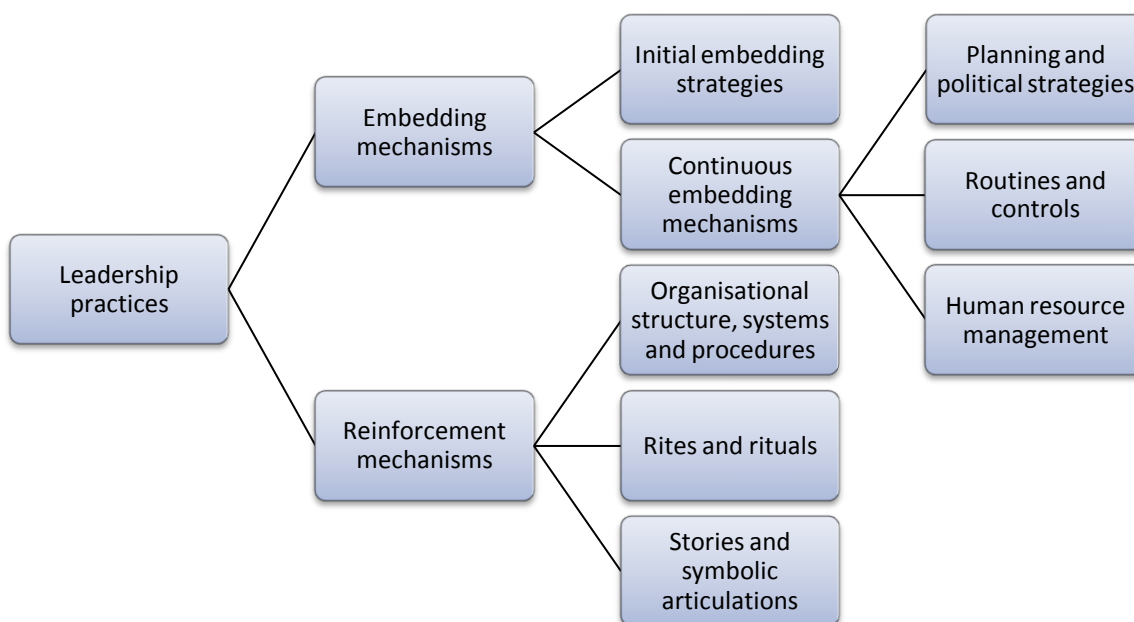


Figure 5-8: Refined leadership framework to address cultural and behavioural challenges

5.3.1 Analysis of case study 1 – Project X

5.3.1.1 Background information to the case study

Project X was formed from a Private Finance initiative between a large public client and a group of three large companies. A cooperation agreement between these three major companies was to deliver a design and build lump sum contract public infrastructure building over a period of 8 years. There were several planned handovers during this period of time and every handover made in the last 6 years was under the agreed budget and delivered on-time. The total cost of the project exceeds £300 million with the budgeted cost of each handover around £14 million.

A large design and build contractor took the main role in delivering this public infrastructure project. A hard facilities management provider also formed part of the cooperation agreement together with a large design and build contractor. Their job was to take ownership of the project's assets over their life cycle through asset management practices, and operation and maintenance to building services, thereby ensuring that assets meet the business needs of the client over its life cycle. This included services such as fire systems, electrical systems, building automation systems, and elevators. The other party to the cooperation agreement was a soft facilities management provider who supplied value-added services that are not necessarily core to the client's services, but vital to the effective day-to-day operations such as security, laundry, general cleaning, and office supplies.

The project has three main buildings and other satellite buildings for support facilities. At the time of the interviews, 90% of the main building works had been completed. Importantly, 40% of the project budget was for mechanical and electrical services. It was also noted by the interviewees that regulations governing the infrastructure building were far more stringent than a commercial environment; hence there was greater than usual importance placed on the quality of delivery. In addition, there was more political and public interest and concern regarding the provision of this infrastructure project.

The client's project manager and contractor's project manager indicated that culture in the main part of the hospital area was a bit more confrontational and rigid than other

surrounding projects. Although there was a very good working relationship between the client’s project manager and the contractor’s project manager, there were several other parties involved in providing services to the main building and the client’s project manager indicated that it did not provide enough time to build relationships with all the parties. However, she went on to indicate that there was a lot more frankness within the project where parties were invited for meetings to talk openly. A similar cultural environment was indicated by other interviewees from project X.

5.3.1.1.1 Interview details

Due to the nature of the study, the project leadership members were selected for interviews. The contractor’s project manager was able to arrange and provide accommodation to conduct these interviews. Table 3-6 summarises the details of the interviews conducted.

Table 5-3: Details of interviewees from project X

Interviewee	Position
XPM	Client’s project manager
XMC	Main contractor’s senior project manager
XDM	Design manager
XSC	Subcontractor
XCM	Construction manager

XPM was the client’s project manager at the main PFI project office. Her office was adjacent to the project site. She had been involved for the last 6 years of the project and led a team of 6 employees. Even though this was her first project management role in a large infrastructure project for a public client, her comments showed that she had a very good working relationship with the contractor’s project manager, and other major subcontractors and suppliers.

XMC functioned as the main contractor’s senior project manager for the project. He was a young project manager with 10 years of industry experience; however, he has managed a broad range of partnering projects in the past and was viewed favourably by the board of directors to lead such a large scale construction project. He was appointed

at the same time as XPM for the construction phase of this infrastructure project. More than 100 people worked under him in this project.

XDM joined as the design manager after the departure of the initial design manager and had worked in the project for 4 years. His main role was to coordinate a newly formed design team at the main office and the project team of 8 employees to deliver the required drawings and specifications. He had worked in the industry for more than 30 years.

XSC was the project manager of the Mechanical and Electrical (M&E) contractor for the project. 40% of the project budget was allocated for M&E services of the buildings and his company was contracted to supply and build M&E facilities for the project. XSC had been part of the project for the previous 3 years and had partnered with another small building contractor who built fit-out works. His team consisted of 2 site managers and 2 construction managers who managed a large workforce to deliver the M&E facilities for the project.

XCM was one of the project's construction managers, with 5 years of experience and who had worked in the project for the previous 3 years. His main role was to coordinate daily construction work and to ensure the health and safety of all workers within the project. He worked closely with XMC and XSC.

5.3.1.2 Initial embedding strategies

From the analytical coding on the 'structural and political strategies' category, it emerged that there was a distinct group of codes (from axial coding) which only focused on the initial stages of project X. These codes were separated from the 'structural and political strategies' category and introduced into the initial embedding strategies. A much more focused as well as theme developing axial coding was performed at the beginning of the analysis to form leadership practice areas and leadership practices. However, themes such as create borderless project entity (311), get the employees to buy-in (322), early involvement of parties (313), pre-start deliberations (314), cultural alignment of parties (315) from 'structural and political strategies' from the survey interview analysis also influenced the researcher's thought process to realise patterns

and themes in the case study analysis and the following themes emerged from the coding.

Figure 5-9 presents a cognitive map of initial embedding strategies within project X. Primary focus and vision (411), selling decisions with invited questions (412), selection of leadership team (413), early involvement of parties (414), collaboration via conditions of contract (415), and pre-start deliberations (415) were identified as leadership practice areas in this category.

From the analysis of interviews with the leadership team in project X, it emerged that value engineering (4111), timely delivery (4112), concern for employees (4113) and collaborative approach (4114) were considered as the primary focus and vision (411) at the initial stages of the project. According to XSC, value engineering to fit the scope to the budget and time should be done at the beginning of the project (41111). This was affirmed by XMC and XDM. XDM went on to say that, *“efficient value engineering is critical to optimise design; value engineering after the original design and sometime during the construction design won’t be very helpful (41112)”*. All five interviewees from the project strongly expressed their focus on timely delivery (4112). Only XMC and XPM were able to provide insights from the early stages of the project due to their early engagement with the project. XPM stated that, *“delivery on time is very critical to the project and it was clear from the start that we have to make timely deliveries to the users (41121)”*. XSC mentioned that for timely deliveries it is important to coordinate and achieve all the targets (41122). He went on to state, *“for large projects it is all about who is doing what, what their objectives are and what their remit is? It is about direction and definition of their role to achieve time targets (41123)”*. Even though timely deliveries are considered as one of the primary foci, XPM and XMC also stated their concern for employees (4113). While XPM took a more general approach and stated that, *“depending on the situation, focus on people or product (41132)”*, XMC was clear about his priority towards his concern for employees. He went on to declare that, *“we put people first, but we explain how important production is and how people can manage it (41131)”*. Furthermore, XMC indicated the setup of ground rules related to trust and collaboration from the beginning, which initiated a much more collaborative working way in the project (41141).

When it came to early decision making in the project, the interviewees pointed out a democratic way of bringing all the parties to the partnering project by, ‘selling decisions with invited questions (412)’. XPM stated that, *“we try to bring all the stakeholders to buy into the new working ways and culture; we discuss this at the beginning, but it takes time. There are a few subcontractors who need some more lessons in how to work together (4121)”*. Similarly, XMC mentioned, *“it is all about collective achievement of goals. We proposed targets and programs and got the feedback from contractors. But to achieve these targets we need to work together throughout the project. Therefore we need buy-in from everyone from the beginning (4122)”*. XSC confirmed this way of selling decision from XMC at the initial stages of his engagement with the project.

Analysis on the interviews from ‘case study X’ pointed out the vital role of the ‘selection of the leadership team (413)’ in addressing cultural and behavioural challenges. Dedicated team members (4131), organisational support (4132), pride in delivery (4133), cultural alignment (4134), performance (4135) and previous experience (4136) were identified as criteria for the team selection in the early stages of the project. XSC pointed out the dedication and commitment of the project team to support construction (41311). This was confirmed by XMC, who proposed to show commitment and lead by example (41312). XMC also asserted that he had organisational support (4132) and stated, *“I’m well supported by company managers and it is important for my selection to a large scale project like this (41321)”*. XPM, XMC, XDM and XSC declared that they take pride in the involvement and delivery (4133) of the project. XDM went on to state, *“it is a long and hard project; we have gone through some difficult times. But I’m very proud to be involved in the project and its delivery (41331)”*. XPM and XMC expressed their focus on cultural alignment (4134) when it comes to the team selection. XMC mentioned that, *“we choose from a selected list of subcontractors and nominate them for work; due to limited experience of clients they normally select our recommended subcontractors/suppliers (41341)”*. However, XCM pointed out that it is not always the case. He claimed that, *“sometimes you have to work with parties with adverse culture, because they may be the only available ones for this magnitude of project (41342)”*. XCM also pointed out the importance of performance (4135) and previous experience (4136) as important factors to consider for selection. Regarding previous experience, he mentioned that, *“if there is any previous experience on working with the same company obviously that would stand in good stead (41361)”*.

This was affirmed by XCM, who pointed out the importance of the company's subcontractor selection list, based on performance and past experience.

According to XDM, early involvement of parties (414) to the project is crucial to the delivery. He mentioned that, *“it is important to set the correct team and the nature of people involved at the early stages; this allows us to understand them, communicate easily and drive performance and delivery (4142)”*. This notion was supported by all the interviewees from project X. XSC went on to declare that, *“because we were able to get involved at the early stages of this project we can drive that scope (4141)”*.

From the analysis it emerged that parties have driven collaboration via conditions of contract (415) in the project. However, the interviews were held 6 years after the contract stage and interviewees provided comparatively less evidence of these early stage activities. XPM stated that, *“we have a set of processes and procedures via conditions of contract to make parties to the contract act in a collaborative way (4151)”*. XMC took an ‘arrangement on asbestos removal (41521)’ as an example to point out the set-up of reward systems between parties to the partnering contract (4152). DM talked about information sharing methods (4253) and mentioned that, *“we have set-up systems to share information as a procedure; this allows easy communication and encourages openness (41531)”*. However, XCM pointed out the difficulties in following these procedures and went on to state, *“as part of the contract conditions we set up this information sharing mechanism. However, information such as method statements and risk assessments have to be constantly chased via mails and meetings (41532)”*. This showed that collaboration via conditions of contract (415) was not a bullet proof strategy and it will require reinforcement mechanisms to address cultural and behavioural challenges.

Other initial embedding strategies are put together under pre-start deliberations (416), as shown in Figure 5-9. Ground work and early strategies (4161), corporate governance reporting structure (4162) and stakeholder involvement (4163) were identified under this category. XDM noted early strategies such as the project execution plan which set out the regular meetings, order of work and information sharing (41611) that were used in the project to ensure deliveries. XMC indicated the importance of groundwork to specify contracts and conditions. He took a ‘risk related to firewall’ example and stated,

“fire strategy was not bombed out from the beginning and subcontractors have taken major pain in these areas (416121)” and went on to explain, *“because of the change of fire walls, change of dampers, like key activities, have massive impact on fire strategy, and internal M&E and partitions (41612)”*. However, analysis did not find any detailed information regarding these strategies. Interviewees from the project only indicated some of the effects at the latter part of the project due to good or bad early strategies. Both XPM and XMC indicated the significance of the corporate governance reporting structure (4162 and 41621) to maintain quality and delivery. XPM went on to criticise that, *“trust is not part of it; hence, it doesn't encourage gain-pain sharing between the contractors and client (416211)”*, indicating the importance and requirement to include relationship building within projects. XPM also mentioned stakeholder involvement, pointing out, *“in high profile jobs all the parties are very interested and concerned (41631)”*, especially from users. XMC confirmed and acknowledged his involvement in stakeholder management (41632).

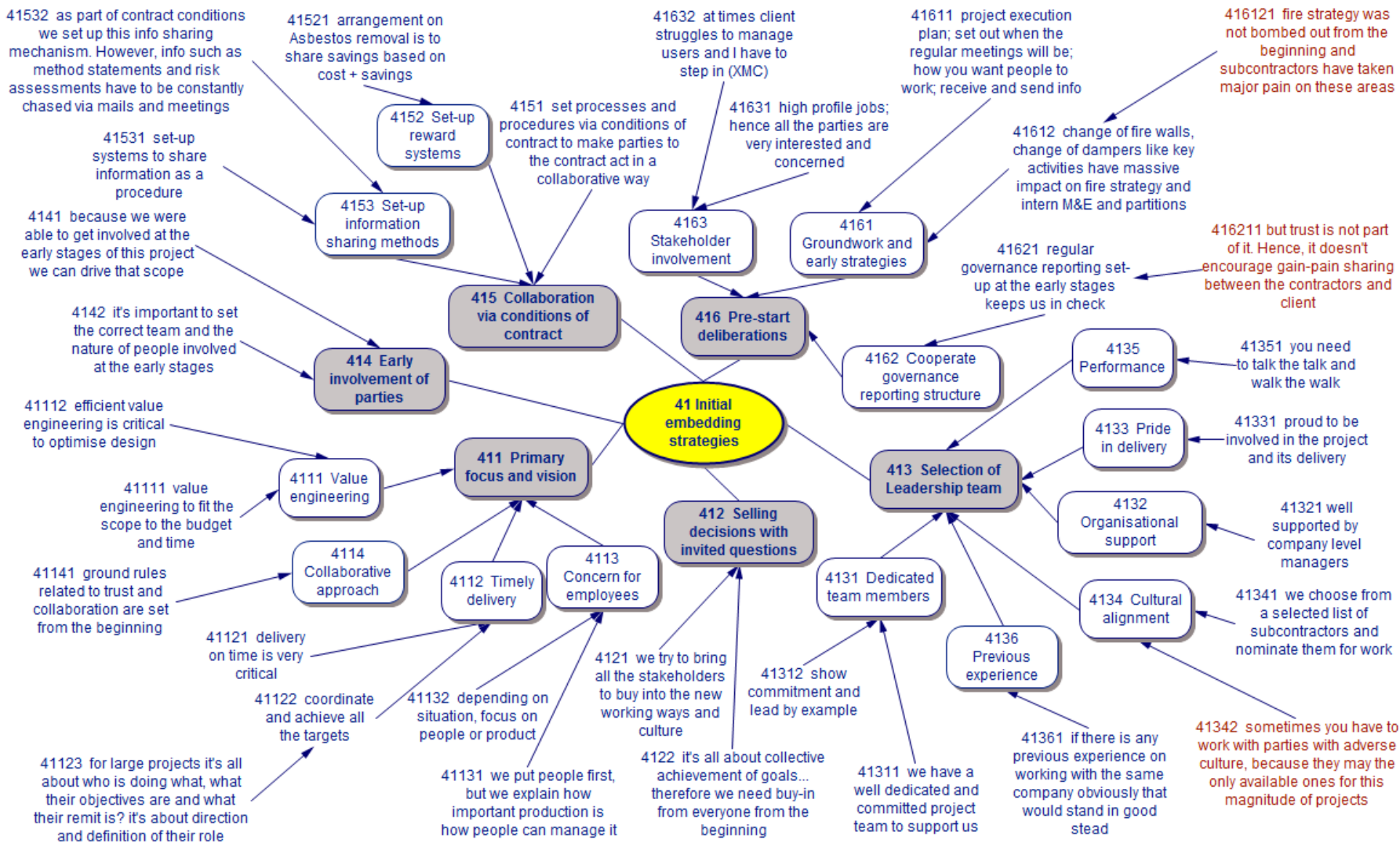


Figure 5-9: Cognitive map of initial embedding strategies within project X

5.3.1.3 Continuous embedding mechanisms

Continuous embedding mechanisms were strategies used throughout the project to address cultural and behavioural challenges. As shown in Section 5.3.1.2, continuous embedding mechanisms such as planning and political related strategies were not considered under initial embedding strategies and they were categorised under planning and political strategies, as discussed in Section 5.3.1.3.1.

5.3.1.3.1 Planning and political strategies

The cognitive map in Figure 5-10 represents planning and political strategies to address cultural and behavioural challenges in construction partnering projects. These strategies are part of continuous embedding mechanisms to entrench and transmit culture within project X. Analysis shows that collaborative decision making (421), balanced power (422), influence of top management (423), continuity of key project staff (424), clear division of labour (425) and selection of parties (426) are major leadership practices in this category.

Team members of the project highlighted collaborative decision making (421) as one of the prominent leadership practices to handle cultural and behavioural challenges throughout the project. Encouraging a problem solving attitude (4211), negotiating to make changes (4212), jointly addressing health and safety concerns (4213) and the role of a facilitator (4214) emerged as key practices that encourage collaborative decision making. While XSC talked about encouraging problem solving via information sharing between relevant parties (42112), XCM pointed to the importance of explaining common goals to encourage problem solving (42113). XMC stated that, “*we encourage collaborative ways of problem solving; if someone sees another person doing anything wrong then he should advise and suggest that person to do it in the correct way. But some people won't do that. I normally challenge this ignorance and encourage collective achievement of goals; working together towards common objectives (42111)*”. Both XPM and XMC consider that they are taking more pain than the other parties (42121), and recommended negotiating to make changes (4212), rather than directing changes to construction. This was affirmed by XDM. XCM pointed out the

importance of jointly addressing health and safety concerns (4213) and stated that, “*we empower workers to address day to day health and safety matters; through this they come with their own solutions as well. Most of them are very simple but effective (42131)*”. All parties interviewed from the project emphasised the role of the facilitator (4214) between various parties to the partnering project. XPM talked about facilitating the involvement of end users in decision making (42143) and went on to say, “*we are a conduit in the middle to pass information between the project and the end user (42144)*”. While XCM focused on operational aspects and considered one of his main duties to facilitate and coordinate activities to clear obstacles (42141), XMC took a more strategic approach to bring parties in conflict to the table and as a group try to solve relevant matters (42142).

XPM and XMC proposed empowerment of parties (4222) to bring balance to power and politics (422) in the project environment. XMC urged group decision making to solve matters as an empowering activity (42221). Importantly, several parties highlighted the respect for experience and knowledge, and its significance in the balance of power between project parties. XPM stated that, “*it is a constant battle; we win some and we lose some; but we draw from each other's experience (42212)*”. XMC talked about suppliers’ experience in specific areas and mentioned that, “*sometimes there are issues between subcontractors and suppliers; for example a supplier for doors trying to tell you what you want rather than the other way of communication. But suppliers have great experience and you need to take their suggestions into account (42211)*”. A similar notion was presented by XCM and XDM.

XMC, XCM and XDM agreed that top management support is vital and its influence could guide them towards better decision making. XDM talked about top management site visits (4232) and stated, “*we had visits from the CEO to show that they are interested in the bottom line; sometimes they are harsh when they don't get the answers or when they don't get the answers they are expecting. But they are fair and they have to report to shareholders. But I won't put it as an additional pressure; it is just our normal routine of activities (42321)*”. Both XMC and XCM appreciated top management visits and talked about its influence on all the project parties. XPM stated that she has only handled minor claims and most of the claims are handled by project directors (42311). This indicated a vertical decentralisation (4231) in the client’s hierarchy, where formal

power to make choices and authorise decisions were delegated down the chain of authority but limited to certain decisions. She went on to explain about a claim made by one of the subcontractors and some of the related issues.

XPM, XMC and XCM stressed the need to have key project staff throughout the project (continuity of key project staff; 424). XCM stated that, *“it is important to look after the staff otherwise you'll lose them; always highlight short falls to senior management, if that happens (4242)”*. However, XMC highlighted that it is impossible to keep everyone in the project and went on to point out discussions with leaving members (4243), as a way to find replacements. He stated that, *“discuss with the leaving members to find out who can replace them. They will know a better replacement within the project and that is better for the project management (42431)”*. On a similar notion, XSC showed his concerns about high turnover of staff, and stated *“when there is high turnover of staff, you lose a lot of knowledge and relationships; and other people may use it for their advantage (4241)”*.

XMC, XCM and XSC emphasised the way that they managed daily work and sequencing activities by providing clear division of responsibilities/labour (425, 4251). XCM pointed out the role of leadership to encourage sharing problems (4253) and said, *“identify people who have problems in managing issues and help them; it is important for a leader to identify when people struggle (42532)”*. XMC took a similar view; but went on to say, *“As a project manager you delegate tasks and share problems; when there is a problem, people have to share it (42531)”*, showing a difference in what is expected from followers compared to the views of XCM. XSC pointed out the training courses provided by the main contractor on how to take responsibility and manage work (4253).

Besides the initial embedding activities regarding the selection of a leadership team (413), XMC, XDM and XCM declared the need to select suitable subcontractors and suppliers throughout the project. XMC talked about a list of subcontractors/suppliers, from which they select a relevant party to do the construction (4261 and 42612). He stressed the need to be at the top of this list by collaborating and performing better with the main contractor. XCM affirmed this and highlighted the safety requirements. He went on to explain, *“we use a procurement database; only safety accredited people can*

go in that database and even before they get accredited, before they get on the tender list they will have a 2 day audit before they get accepted; These audits and measures have a link to our procurement section (42611)”. XCM also pointed out that the procurement team went around the site to ask for feedback from subcontractors and that fed to the main contractor’s procurement database (4262).

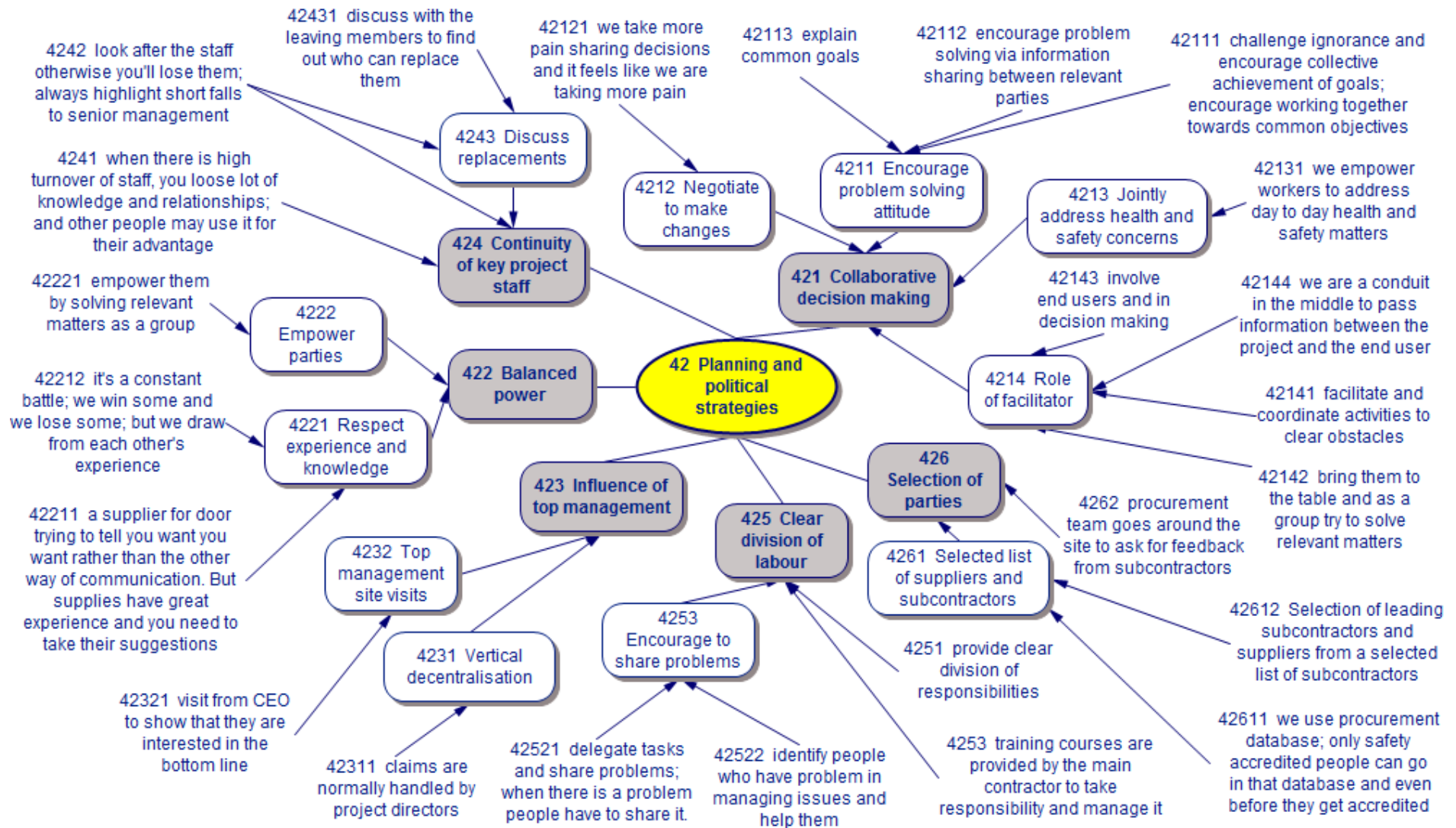


Figure 5-10: Cognitive map of planning and political strategies within project X

5.3.1.3.2 Routines and controls

The cognitive map in Figure 5-11 represents leadership practices in routines and controls. Analysis shows effective communication (431), sharing information (432), risk sharing (433), resource management (434), motivation of parties (435), progress monitoring (436) and risk sharing, as major leadership practice areas in this category.

According XPM and XMC, effective communication is a critical factor for the success of the project. XSC also verified this notion and indicated that it is one of the strengths of the project. XCM pointed out a need to include all the relevant parties during discussions (4311 and 43111) and went on to mention that the project team regularly met subcontractors and suppliers (43121). XDM confirmed this improvement in communication and went on to talk about construction issues. He pointed out that, *“the essence of most of the problems at the site is that 'we failed because we didn't talk'; it is not acceptable. We have made strides in achieving this communication; but there will always be one who won't come to the party (4315 and 43151)”*. XPM indicated the importance of communicating decisions at the right time (4314 and 43141) to enable a seamless construction process. XMC further expressed the need to communicate all the way to levels right down across the work place (43131).

From the analysis it emerged that sharing information was considered as one of the major changes in partnering projects compared to traditional construction projects. XMC stated that parties need to be open and approachable (4321 and 43212) to improve integration within parties to the partnering contract. XSC verified this notion and went on to declare that, *“we have open book costing and main contractors can see our prices (43211)”*. Similarly, XDM noted open sharing of information (4322) and went on to highlight related issues in sharing incomplete information with other parties (43211). He also discussed a design fault in the construction drawings and suggested that the right flow of information was vital, especially with a huge volume of designs (4323 and 43231). XMC verified this and went on further to point out the importance in providing information at the right time and with the right content and quality (4324). He mentioned that, *“I stress how important information is to all parties and I make sure that everyone has the right information at the right time; and it is the right content and*

the right quality that enable them to carry-out their parts of the projects successfully (43241)''.

Surprisingly, there were less direct references from the interview data regarding risk management. XMC and XPM noted the 50/50 share of pain gain in one of the unforeseen circumstances (433). XMC went on to state, *“we came across an unforeseen 3rd level asbestos removal during inspection; we allocated an amount and decided as a team to share any savings 50-50 (4331)''.*

According to XDM, it is important to control the scope of the project (4342) to effectively manage resources (434). He stated that, *“sometimes it is about letting them know that a particular work is outside the scope and letting them decide on that (43422)''.* A similar notion was expressed by XMC (43421). XMC had undertaken some cost cutting measures via continuous value engineering in the project to fit the current budget. He went on to explain, *“we try to save money as much as possible; we cut down in terms of preliminaries, staff and some re-tendering for better value when market conditions allow (43411)''.*

Several members of the project considered various means to motivate parties to achieve better performance. XSC pointed out continuity of contracts based on experience, capacity and delivery as one of the motivations to work collaboratively in the partnering contract (4351 and 43511). XSC pointed toward the rewards associated with cost savings (43521). However, XMC noted that fixed rates in some of the trades were not helpful in achieving cost savings (435211). This indicates that there was no uniformity among procurement methods, and suggests a need to consider collaborative forms of conditions during the initial stages of the project. XMC and XCM spoke of upfront payments to subcontractors and suppliers to assist cash flow issues (4353 and 43531). This notion was verified by XSC. However, upfront payments to subcontractors and suppliers also provided a discount to the main contractors (43532). Furthermore, XCM pointed out the importance in demonstrating partnering benefits (4354) and the necessity to work as a team to achieve these benefits (43541).

According to XPM and XMC, monitoring progress and issues (436) is one of the main routine activities to ensure delivery on time. XPM mentioned that, *“on a regular basis*

we monitor progress; we have one to one discussions and fixed drop dead days to ensure delivery". XSC expressed similar practices and stated that *"we tend to have weekly or fortnightly meetings; everybody from different jobs and different disciplines sit around the table and run through the schedules and any issues that could crop-up"*. XMC pointed out that performance and delivery improves confidence (4362) and went on to state that, *"we have a track record of handing over on time on budget and we take pride in achieving that (43621)"*. However, he also mentioned the need to chase up activities to get the things done (4361 and 43611). Furthermore, XCM noted initiatives to save from demolition waste as a cost saving measure and an illustration of sustainable construction (4363 and 43631). XMC also point out subcontractors' guidance to the main contractor's staff members on how a particular activity can be sequenced in a better way (4364 and 43641). He went on to explain that it has become possible due to collaborative working practices in partnering projects.



Figure 5-11: Cognitive map of routines and controls within project X

5.3.1.3.3 Human resource management

The cognitive map in Figure 5-12 represents human resource management related leadership practices within the project. These practices deal with people management, including the leadership team's decision to change to an integrated approach in construction partnering projects. Analysis shows that personal motivation (441), project leadership qualities (442), collaboration and trust (443), recruitment and assimilation (444), deliberate role modelling (445) and developing a responsible workforce (446) are the main leadership practice areas in this category.

Personal/individual motivation (441) was one of the main foci of leadership among human resource management practices. Various extrinsic motivational tools were used by leadership to limit the perception of potential alternatives. XMC and XSC mainly believed in deliberate coaching to instil self-belief (4411) and to encourage employees to lead and perform activities, which in turn helped to get the job done easily (44111). XMC indicated that some people struggled to change because they were attached to procedures and rules. He went on to point out the need for assistance all the way through, to instil self-belief and encourage the concerned employees to acknowledge change towards collaborative working ways (44112). Furthermore, the leadership team proposed awards to recognise best operatives of the year, which led to pride in working for the project (4412, 44121 and 44122). XMC pointed out that his promotion required sponsors such as major public clients and the only way to achieve that was through successful deliveries (44123). Equally, permanency of workforce helped XSC to plan ahead and ensure a degree of confidence regarding the quality of the workforce (4413 and 44131). XPM, XMC and XSC declared their concern over welfare of the work force (4414) and suggested to be receptive to employee needs. XSC provided an instance where he had to give time off work for welfare related concern of an employee and similar examples were quoted by XMC. XPM went on to state that, *“depending on personal requirement, I motivate people through peaks and troughs (44141)”*.

From the analysis it emerged that the project's leadership team showed a combination of transactional and transformational leadership qualities. All the interviewees from the project indicated the importance of leading by example (4421) and providing good role

models for the other staff members to motivate and energise performance (44211 and 44212). This transformational characteristic to lead from the front was openly visible in the activities of XMC and XDM. They insisted on providing fair treatment, respect and support to all parties of the project (4422). XMC went on to state that, *“there will be people who will feel alone or need more guidance; it’s difficult to cover everybody as we need more senior managers; to treat people with respect, be clear and precise about what you want; be realistic and fair in your activities (44223)”*. XDM considered varied treatments to younger and senior workforce. He sought to, *“provide support, respect and be enthusiastic for older guys while mentoring and guidance for younger guys; guide first then give them tasks and you can be hard on them to perform (44221 and 44222)”*. XMC also pointed out the need to be open and approachable to discuss various issues (4423 and 44231). XCM and XSC affirmed this notion. XMC, XDM and XCM proposed taking on a holistic perception to solve matters in the project (4424). XMC felt it was, *“important to be a more rounded manager who can look after the whole project; reduce the friction between sections such as building and M&E, and make that step change to discuss matters to finalise, than passing the problems (44241 and 44242)”*. A similar opinion was given by XDM and XCM. XCM went on to point out the fragmented nature of finance/commercial activities when compared to the normal operational activities (44243). Furthermore, XPM stated the need to provide vision and clear objectives (4425), indicating a transformational approach regarding organising and structuring activities. She went on to state that, *“it is all about stating our objectives; giving people direction; prioritising in what we are trying to do; being more structured; follow guidelines; and build a really good team (44251)”*. A similarly structured managerial approach was preferred by XCM and XSC. Moreover, XPM, XMC and XDM suggested the ability to communicate played a major role in encouraging collaborative ways of working (4426 and 44261). XPM and XMC also declared their strong internal motivation (4427). XPM noted a desire to, *“be very enthusiastic about what you are trying to deliver and you got to affect those people with enthusiasm and making it matter to them as much it matters to you, mainly construction managers and project managers (44272)”*. Furthermore, XMC suggested the need to have self esteem and confidence to provide directions and instructions to subcontractors (4428 and 44281). XPM and XMC agreed that self-esteem comes through experience (44282). XMC and XCM proposed being self critical (4429) to improve their leadership ability. XCM stated that, *“it is about knowing where you are at a point of time, don’t*

dilute yourself, be honest with yourself and be critical about yourself; it is also about knowing your objectives and knowing what makes the client tick, knowing what the client's drivers are and what is he/she passionate about (44291)". In addition, it was observed and evidenced from the interviews that XPM believed in the leadership team and left them alone to respond to their responsibilities and obligations in their own ways with the least possible guidance. This indicated a laissez-faire leadership approach to deliver the project objectives (44210). XDM and XCM affirmed this notion, stating that they took most of the directions from XMC. XCM and XSC also indicated this by referring XMC as the main leader of the project.

Interviewees from the project declared their intentions to build trust and ways of collaborative working. XPM, XMC and XSC indicated mutual respect (4431) and valuing contributions (4432) as important aspects to build trust. XMC endeavoured to *"give respect to people, let them know that you value their input, respect their experience, help them to sort out relevant matters and coordinate activities to clear obstacles"*. In a similar vein, XPM proposed to make people feel that their contribution is valued to improve trust (44321). Also, honest behaviour (4433) was recognised by XDM and XCM. XDM went on to point out agreed on-time deliveries (44331) to improve trust. XPM suggested providing an integrated view of the project to work together for better performance and to realise partnering benefits (4434 and 44341). XPM and XMC also insisted on allowing time and support to improve trust (4435, 44351 and 44352). However, they also looked to influence and engineer trust building. XPM added that, *"trust building requires a bit of engineering as trust doesn't naturally always evolve; we need to give it a nudge in the correct direction and sometimes pull back (4436 and 44361)"*.

In terms of recruitment and assimilation (444), XCM, XDM and XSC pointed out site induction as the central point of information transfer after initial recruitment. XSC mentioned that the site induction (4442), health and safety, project set-up and principles of open communication were explained by the main contractors (44421). This was affirmed by XCM who also insisted on introducing good housekeeping techniques (44422). It was confirmed that the training was led by main contractor (4441, 44412 and 44411).

Furthermore, XMC pointed out the need for a committed work force and recommended deliberate role modelling practices (445) to influence behaviour. XMC proposed to understand strengths and weakness of employees (44511) and to adapt to a given situation (4451) was important. He suggested engineering situations (4453) to make people to perform better and went on to state that, *“some aren't good enough to handle subcontractors and you need to put them into situations to tackle those situations (44531)”*. XSC mentioned that, *“we tend to put people based on their culture; some jobs require a more collaborative nature; also, we try and find something suitable for them (44521)”*, indicating alignment of people to suitable environments (4452). XPM proposed being practical and pragmatic (44541), and to manage expectations (4454). XMC and XCM stated that they allowed employees to mature and get ready to take on a delegated task (4455), and indicated that different people take a different amount of time to understand and communicate (44551).

XMC, XPM and XCM confirmed the notion of responsible staff members who can be held accountable for their tasks. XMC suggested to expose bad practices (4461) and went on to state, *“at the meeting it's about naming and shaming people when things aren't done and praising people when they are done; but there is a fine balance to it (44611)”*. XMC noted that he took full responsibility for the delivery of this project and declared that he expected the same from other employees in the project (4462 and 44621).

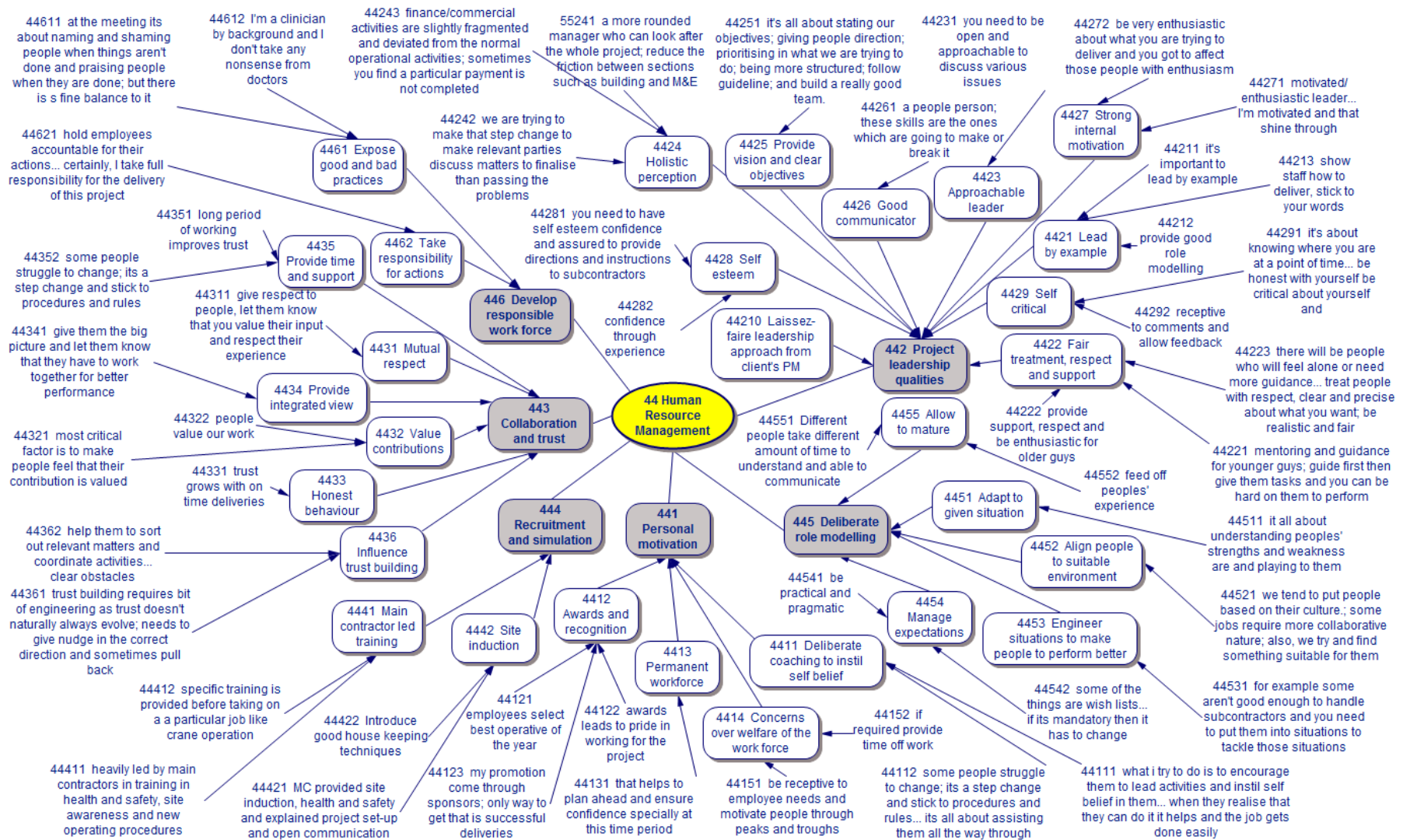


Figure 5-12: Cognitive map of human resource management within project X

5.3.1.4 Reinforcement mechanisms

5.3.1.4.1 Structure, systems and procedures

As represented in Figure 5-13, the cognitive map of structure, systems and procedures provides further detailed mechanisms to reinforce collaborative ways of working within the project. These measures supported and reinforced leaders' proposals to work throughout the project. Analysis shows that an information sharing system (451), informal discussions (452), regular reporting and governing measures (453), formal procedures to deliver instructions (454), project structure and stable work force (455), and open accounting systems (456), were the main leadership practice areas in this category.

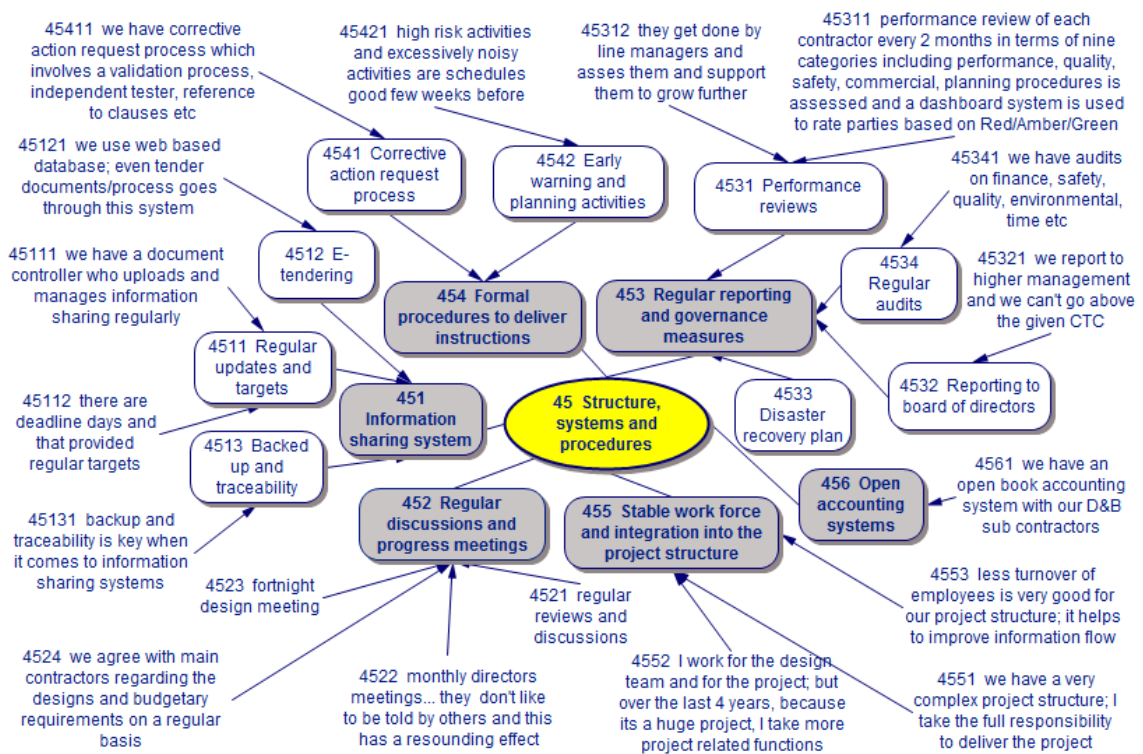


Figure 5-13: Cognitive map of structure, systems and procedures within project X

Project X had a web based information sharing system which was used to provide regular updates and targets to the leadership team and other employees (4511). The system was controlled and operated by the main contractors. However, XSC and XDM pointed out that almost all the information went through this system to relevant parties. XSC went on to mention that they have employed a document controller who uploads

and manages information sharing, because of the large volume of designs, instructions and method statements (45111). XPM revealed that assignment of tasks in the systems demanded deadline dates, which in turn provided regular targets (45112). According to XMC the system was also extended to cover the e-tendering process (4512 and 45121). As such, it provided backup and traceability of information flow (4513 and 45131). XDM went on to state that, *“we don’t plan to shift blame on a particular party, but it is important to identify design issues from the beginning to stop them (45131)”*.

Interviewees from the project described regular discussions and progress meetings (452) to track activities, monitor performance and influence collaborative working ways. The leadership team indicated an extensive range of meetings to influence behaviour and values (4521, 4522, 4523 and 4524). XMC used directors’ meetings to expose some of the bad practices in order to put top management pressure on ‘wrongdoing’ parties whom he did not have much control over. He went on to state that, *“we have monthly directors meetings; directors from sub contractors and suppliers together with our directors attend these and they don’t like to be told by others and this has a resounding effect on site level employees (4522)”*. XSC used these formal meetings and discussions to agree with the main contractors regarding the designs and budgetary requirements on a regular basis (4524).

XPM, XMC and XDM talked about various reporting and governance measures (453) that they have to adhere to within a large scale project like project X. XMC stated that, *“these give additional work but make sure that the project is delivered better; they are not bad for the business; they make sure that we are delivering what we should be and we are following procedures”*. While XDM mentioned the carrying out of annual performance reviews for individuals (45312) XMC pointed out contractors’ performance reviews. He went on to describe, *“performance reviews of each contractor every 2 months in terms of nine categories, including performance, quality, safety, commercial, and planning procedures, which are assessed and a dashboard system is used to rate parties based on Red/Amber/Green (45311)”*. He also mentioned reporting to a board of directors on a revised cost to complete (CTC) for each work package (4532 and 45321). As part of the governance measures, XPM revealed disaster recovery plans for information retrieval (4533), while XMC and XCM mentioned regular audits on finance, safety, quality, environmental and time (4534 and 45341).

Although members of project X recognised a need to uphold ways of collaborative working and a partnering philosophy, they suggested formal procedures to deliver instructions so that problems can be put to one side and dealt with separately (454). XCM pointed out a corrective action request process that sometimes involved a validation process and an independent tester in addition to the regular reference to clauses and formal letters (4541 and 45411). He recognised that it places additional work on parties, but is required for legal and contractual procedures. XPM and XMC revealed early warning and planning activities to convey the schedules for high risk activities and excessively noisy activities (4542 and 45421).

Furthermore, XMC and XDM pointed to having a stable work force and integration into the project structure (455) to reinforce some of the embedding activities. Project X adopted a complex matrix project structure with over 100 staff members. XMC took full responsibility to deliver the project (4551), indicating a strong project matrix. This was affirmed by XDM who went on to state that *“I work for the (company) design team and for the project; but over the last 4 years, because it’s a huge project, I have taken more project related functions (4552)”*. XMC also suggested the need for a stable workforce to assist reinforcing some of the embedding mechanisms as it would help to improve information flow (4553). In addition XMC, XDM and XSC indicated the use of open accounting systems (456 and 4561) to improve openness and trust between parties to the partnering contract.

5.3.1.4.2 Rites and rituals

The cognitive map shown in Figure 5-14 represents rites and rituals used to reinforce collaborative ways of working within project X.

XMC and XCM pointed out site walk-arounds (461) as an effective way of reinforcing and implementing a partnering philosophy within operational activities. XMC mentioned that he went on these walks once a week and that was the maximum he was able to do due to the large extent of the project. Sometimes XPM joined together with XMC during these walks to monitor and discuss related construction and service issues. XCM suggested using this to involve relevant parties in mutual communications (4611

and 46111). Moreover, he indicated the provision of excellent welfare facilities in the project to its employees (462). For example, XSC noted that they have separate personnel for health & safety and welfare activities (4621), while XMC mentioned a suggestion box to get feedback from employees.

Unsurprisingly, it emerged that informal discussions (463) were used to share information. All the interviewees from the project mentioned countless informal discussions about project and specific construction issues (4631) outside the procedural steps. This has become an accepted practice to communicate within the project and it pushed forward the agenda of an integrated team, thereby reducing the likelihood of an adversarial culture developing.

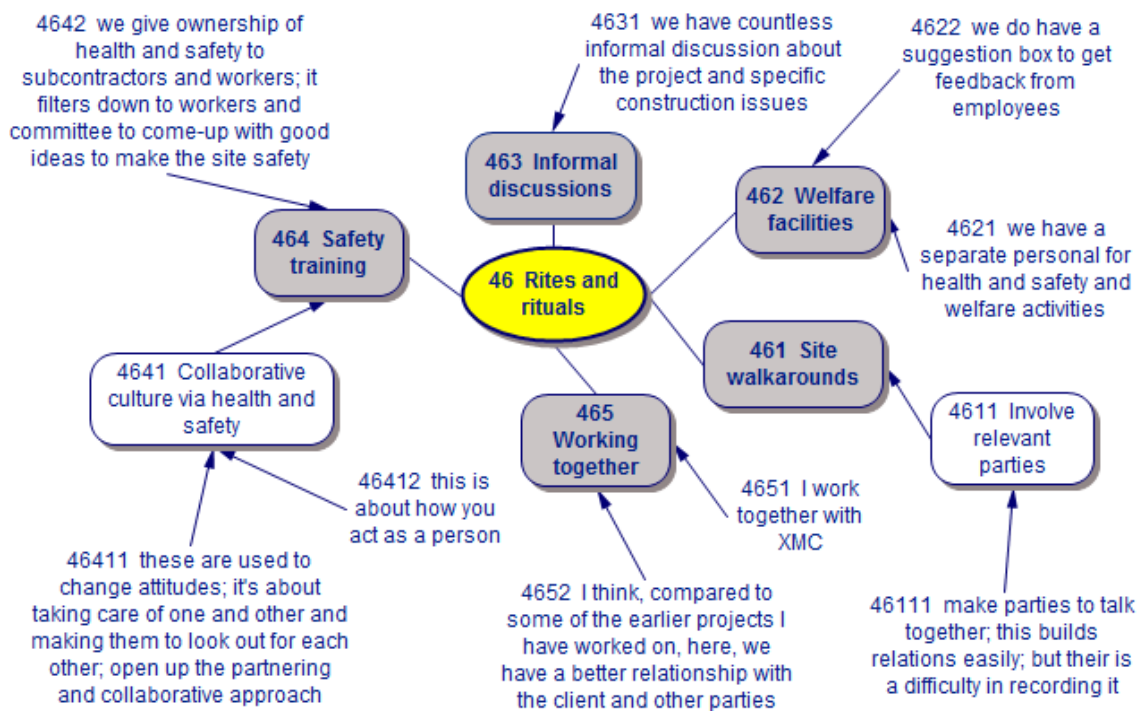


Figure 5-14: Cognitive map of rites and rituals within project X

Interestingly, project X upheld health and safety of employees as a key focus and used this safety training to promote collaborative working (4641). XCM noted that, *“these are used to change attitudes; it is about taking care of one another, and making them look out for each other; open up the partnering and collaborative approach (46411)”*. This notion was affirmed by XDM and XMC. XMC went on to state that, *“we give ownership of health and safety to subcontractors and workers; it filters down to workers and the committee to come-up with good ideas to make the site safe (4642)”*.

Interviews with members of the leadership team also indicated a strong ‘working together’ (465) culture. At the beginning of the interview XPM introduced herself with “*I work together with XMC (4651)*”, indicating an ongoing collaborative working relationship between the main contractor and the client. XMC also affirmed this and stated that, “*I think, compared to some of the earlier projects that I have worked on, here, we have a better relationship with the client and other parties (4652)*”.

5.3.1.4.3 Stories and symbolic articulations

The cognitive map in Figure 5-15 represents stories and symbolic articulations within the project.

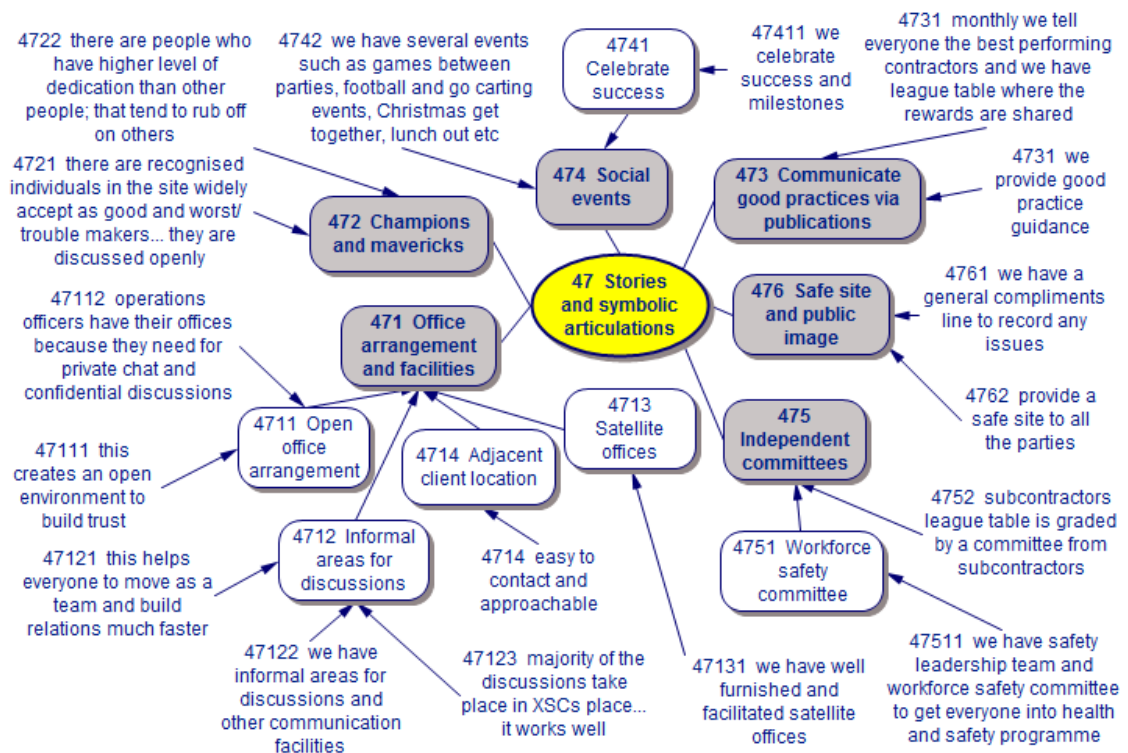


Figure 5-15: Cognitive map of stories and symbolic articulations within project X

Office arrangements and facilities (471) were used as a central articulation to encourage informal and collaborative communication between parties within the project. XPM and XMC described an open office arrangement to build trust between parties (4711 and 47111). However, XMC noted that operations officers were provided with separate offices because they needed them for private and confidential discussions (47112). Most importantly, all the interviewees from the project expressed a need to have informal

areas for discussions (4712). XSC pointed out that their office was often used for informal communications (47122) and declared that the majority of discussion between XMC, XCM, XPM and himself took place in their office in an informal manner, and that these informal gatherings were used to resolve various issues (47123). XDM noted that, *“we discuss lots of matters informally; this helps everyone to move as a team and build relations much faster (47121)”*. XMC and XCM mentioned the adjacent location of the client (4714 and 47141), indicating the visibility and approachability of XPM for any related discussions. Similarly, XSC talked about well furnished satellite offices within the project compound for their use (4713 and 47131). It was evident within project X, that the main contractors showed concern for their employees and other parties by providing offices with excellent facilities.

It was also evident within the project that leaders played a major part in making champions and mavericks (472) visible to employees. XPM stated that, *“there are recognised individuals in the site that are widely accepted as good and the worse trouble makers... they are discussed openly (4721)”* and went on to describe some of these characters. XCM and XSC talked about people who have a higher level of dedication than others and how that rubbed off on others when it came to performance (4722).

As a large contractor, XMC had the means to communicate good practices via monthly publications (473). In addition, on a monthly basis they announced the best performing contractors, which fed into the subcontractors’ league table where the rewards were shared (4732). XPM pointed out that they published good practice guidance (4731). Several interviewees from the project talked about social events (474) and pointed out events such as games between parties, football, go-karting events, the Christmas get together, lunch out and so on (4742). XPM and XMC recognised the importance of celebrating success and milestones to boost morale of the workers (4721).

Importantly, project X maintained several independent committees (475) to ensure equality and fair treatment for the workers. XMC and XCM mainly talked about safety committees (4751). For example, XCM stated that, *“we have a safety leadership team and workforce safety committee to get everyone into the health and safety programme (47511)”*. Also, they had a subcontractors’ league table which was graded by a

committee that consisted of subcontractors' representatives (4752). XMC noted an independent tester was appointed to make sure that the deliveries were made with proper quality by the parties to the cooperation agreement.

The central message from the leadership team of the project was about the provision of a safer site (476 and 4762). All the interviewees expressed the notion of the importance of providing a safer site to all parties. In addition, the main contractors took further steps to improve public image. XMC went on to state that, "*we have a general compliments line to record any issues; a manager will be allocated and asked to close the file after proper mitigation (4761)*".

5.3.2 Analysis of case study 2 – Project Y

5.3.2.1 Background information to the case study

Project Y was one of several infrastructure projects built under a national framework agreement. With an agreed supply chain and underpinning partnering philosophy, this project was delivered under a maximum guaranteed price over a period of 6 years (4 years of construction). A total budget of £55 million was allocated for this phase of construction. The project was delivered in several handovers and the handover cost at the time of the interviews was £15.2 million. A large design and build contractor different to the one from Project X took the main role in delivering this public infrastructure project. However, the facilities management services were handled via separate contracts.

Using an experienced contractor's project manager, the project embraced the partnering philosophy. However, it was introduced as a new way of working within the project. For some of the members of the leadership team, it was the first project with an underpinning partnering philosophy. Project team members expressed that they worked collaboratively and according to the client's project manager it was delivered to a higher standard than the client's expectations. In addition, there were published case studies by the client regarding innovation within project Y on trades such as cladding and roofing.

5.3.2.1.1 Interview details

The interviewed leadership team consisted of a client’s project manager, contractor’s project manager, a major subcontractor and supplier, design manager and construction manager. This team was interviewed to understand leadership practices within project Y. Table 3-7 summarises the details of the interviews conducted.

Table 5-4: Details of interviewees from project Y

Interviewee	Position
YPM	Client’s project manager
YMC	Main contractor’s project manager
YDM	Design manager
YSC	Subcontractor and supplier
YCM	Construction manager

YPM was the client’s project manager located closer to the site. He was involved in the project from the very start of the design stages. He had worked in several partnering projects and was heavily dependent on the contractor’s project manager’s expertise on construction related issues. However, he did have surveying experience and was able to quickly understand and modify construction drawings.

YMC had worked with several large contractors in the UK in providing public infrastructure projects. He had also delivered commercial buildings under partnering arrangements. He joined the project 6 months into the construction phase with 2 weeks before the handover period. With more than 20 years of construction experience and knowledge regarding infrastructure projects, he showed strong leadership abilities. Other interviewees expressed respect and trust in his abilities to deliver the project.

YDM was the project lead design manager who managed and coordinated design activities. Furthermore, he managed and monitored all the design related communications and made sure that the shared information was complete and compliant. He joined the project at the detailed design stage. Even though this was his first partnering project, he enjoyed the collaborative approach adopted within the project.

YSC was a mechanical project engineer responsible for the provision of mechanical services for the project. He was relatively young with 6 years experience and joined project Y 2 years into the construction phase. His company consisted of mechanical and electrical supply chain with several suppliers and subcontractors. Mechanical and electrical services took about 1/3 of the cost in project Y.

YCM was one of the construction managers. He had worked for the main contractor for 4 years and project Y was his second partnering project. His main role was to coordinate daily construction work and to ensure the health and safety of all workers within the project.

5.3.2.2 Initial embedding strategies

Based on analytical coding, a cognitive map on initial embedding strategies for project Y is presented in Figure 5-16. A primary focus and vision (511), selling decisions (512), selection of leadership team (513), early involvement of parties (514), collaborating via conditions of contract (515), and pre-start deliberations (516) were identified as major cultural and behavioural challenges in this category.

Analysis showed that the primary focus and vision (511) of the leadership team members of project Y was centred on value engineering (5111), timely delivery (5112) and concern for employees from a safety point of view (5113). YPM and YMC pointed out concerns over cost management and value engineering (51111 and 51112). YMC went on to explain, *“the finance is done through to the nth degree... we have to put forward a strategic business plan for these projects because they are viewed as business units; that's the way it is. So the financial side is done to a very fine degree earlier on in the contract”*. Members from project Y gave high importance to timely delivery and focus on production (51122). YMC stated that, *“we have got to hand over the building on time, we have got a programme which is predetermined, we have got the level of quality which is expected by the clients, we have got to achieve the safety record and we have got financial constraints, and there is a margin that we have got to generate for this company; all these are presets (51213)”*. YCM was more concerned about the operational aspects and difficulties in not achieving timely deliveries and the

importance of sequencing works (51121). YCM also showed a higher concern for people and pointed out, *“without people there is no production; it is important to keep people safe to work (51132)”*. Similarly, YMC showed concerns over health and safety of people (51131).

When it came to selling decisions (512), the leadership team of project Y took a more manager-oriented (Tannenbaum and Schmidt, 1973; Hollander and Offermann, 1990) leadership approach. YDM mentioned, *“we need M&E contractors to buy into this concept; we have provided most of the design requirements, we have told them how we operate; it’s just they need complete the work on time (5122)”*, thereby taking a more authoritative, manager-oriented leadership approach. YPM was more relaxed and content to let other leadership team members take control of the situation. He stated that, *“we need to make people think outside the box to operate in a collaborative way (5121); with better collaboration they’ll perform better”*. However, YMC took a more direct approach to management and declared, *“I’m quite happy to hurt the feelings to push towards production; it doesn’t really bother me (51211)”*.

From the analysis of codes on selection of the leadership team (513), it emerged that the leader’s experience and knowledge base (5131), organisational support (5132), pride of being involved in the project (51330), independent PM (5134), cultural alignment (5135) and performance (5136) were the main themes in project Y. Team members such as YPM, YMC and YDM were respected by others for their sheer knowledge and experience on construction related aspects. While YMC pointed out, *“we have a very experienced PM (51312)”*, YPM mentioned that *“PM is a generalist who can deal with various trades; his knowledge regarding various aspects of construction helped us to solve most of the design matters quite easily at the early stages (51313)”*. Similarly YDM stated that, *“we work well together because we draw from each other’s experience; it helps understanding and collaboration (51311)”*. YMC noted the confidence in the organisational support (5132) and declared, *“you are the master of your own destiny; if you change something for the benefit of the job, as a company they will back you up, even if you get big expense involved (51321)”*. All the interviewees from project Y took pride in the involvement and delivery of the project (5133). YSC mentioned that, *“I’m proud to see a building take its place in a vacant land plot (51331)”*, showing a general pride in delivery. However, other interviewees took pride

in creating social good. YMC stated that, *“the reason I came to this company and the reason I came to this framework is because I’ve got quite a big social conscious, really. My motivation is doing buildings that add something to the community; the company know this when I came here because I liked to build things like schools, hospitals, colleges, things that add a bit of benefit to the environment (51332)”*. Within project Y, an independent Project Manager was appointed by the clients at the early stages to ensure fair play (5134 and 51341). While, members of the project team had very little contact with him, YCM and YDM mentioned that, *“they employed an independent PM as an intermediary, but you don't really want him there; we were able to sort out most of the matters ourselves (51342)”*. Considering cultural alignment (5135) of parties to the partnering contract, YPM and YMC declared that the ultimate key for the success is having everyone on the same wave length (51351). YCM took an operational view of cultural alignment and mentioned that, *“we have a list of subcontractors for each trade and they know our ways of working (51352)”*. However, as the project is about delivery, performance (5136) was seen as vital. YPM commended on the performance of the main contractors (51361). Correspondingly YMC pointed out, *“there are seven contractors on this framework at the moment, the way they have picked upon, you look at the KPIs and they will identify who is giving the best value, market advice, and the most realistic budget (51362)”*.

According to YCM, involvement in the pre construction stage would be very beneficial (5141). Since he joined at a later stage, he stressed the importance of handover meetings and stated, *“I didn’t engage from the beginning of the bid proposal but joined for construction; however, we had contract hand over meetings where the bid management team will sit with project management team (51411)”*. This was also emphasised by YSC. YMC pointed out the importance of engaging the entire supply chain at the early stages (5142) and went on to state, *“because it is a design and build project from the start we had sub-contractors involved in design as well as our own specialist design teams (51421)”*. However, he went on to explain *“but not so much further down the supply chain, which could be a good idea to do (514211)”*, indicating some of the difficulties in incorporating all the parties of the partnering contract from the very beginning. YDM also mentioned his involvement at the design stage which was very useful to understand and manage the design team (51422).

From the analysis it emerged that parties are driving collaboration via conditions of contract (515) in the project. However, the interviews were held 4 years after the contract stage and interviewees provided little evidence as to these early stage activities. Most of the interviewees specified ‘guaranteed profit and 50-50 split on savings’ as good reward systems towards collaborative working (5151 and 51511). YDM also noted the early declaration of pain gain sharing (51512). YSC talked about intelligent design procedures where the resources are added by their design manager and mentioned that they were set-up early in the project (5152 and 51521). YMC pointed out the use of an early warning system (5153) and stated that, *“there is a facility in the contract called an early warning system. So anything that we find as a concern, we raise in the paper work (51531)”*.

Other initial embedding strategies were put together under pre-start deliberations (516) as shown in Figure 5-16. Groundwork and early strategies (5161), corporate governance reporting structure (5162), stakeholder involvement (5163) and set-up dispute resolution mechanisms (5164) were identified under this category. YPM, YMC and YDM were specific about groundwork early strategy (5161) and pointed out various mechanisms and strategies at the early stages of the project to handle design and dispute. YPM stated that, *“if you start with the right cost plan, most of the work will be ok (51611)”*, indicating his concerns over cost and value engineering. He also went on to talk about the need to engage stakeholders, including various user groups to provide a building where people would be motivated to go (5163). He went on to say that, *“we launched this with all the parties, even the users. It was very successful and we got a lot of feedback from the events (51631)”*. YMC pointed out various corporate governance reporting structures (5162) which were established at the beginning of the project to ensure appropriate management and delivery. YPM supported this and mentioned that, *“we have various reporting mechanisms set by the project director from the beginning to complete this project successfully (51621)”*.

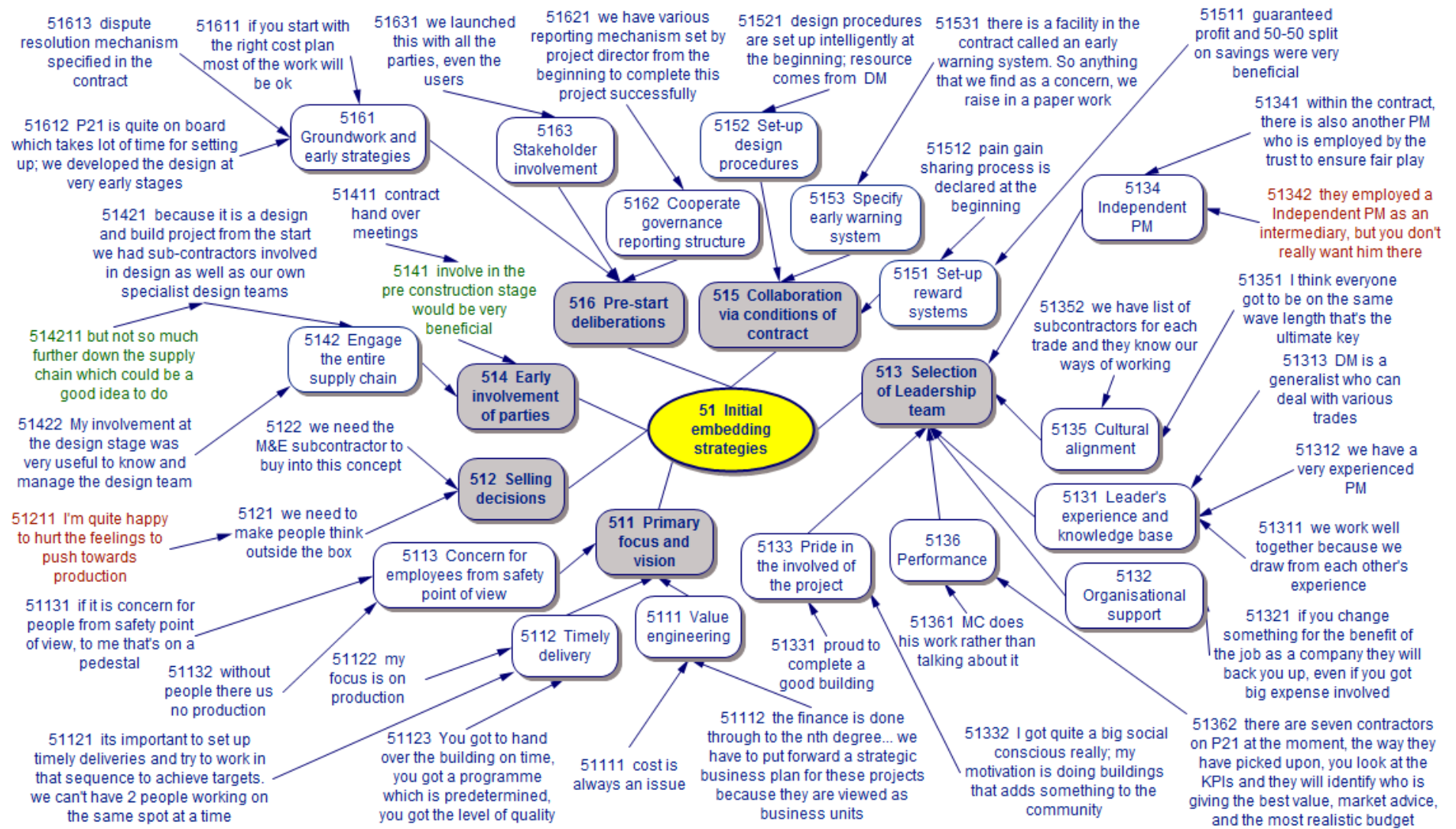


Figure 5-16: Cognitive map of initial embedding strategies within project Y

5.3.2.3 *Continuous embedding mechanisms*

5.3.2.3.1 **Planning and political strategies**

The cognitive map in Figure 5-17 represents planning and political strategies within Project Y. Similar to Project X, the analysis showed that collaborative decision making (521), balanced power (522), influence of top management (523), continuity of key project staff (524), clear division of labour (525) and selection of parties (526) were major planning and political strategies within project Y.

Team members of the project highlighted collaborative decision making (521) as one of the prominent leadership practices to handle cultural and behavioural challenges throughout the project. Encouraging a problem solving attitude (5211), negotiating/challenging to make changes (5212), jointly addressing health and safety concerns (5213) and the role of facilitator (5214), community of practice (5215), and bringing in another specialist (5216) emerged as key practices in encouraging collaborative decision making. YMC and YCM indicated the need to encourage a problem solving attitude (5211) for collaborative working. YMC stated, *“I lead them in the right direction, but from the technological point of view I try and encourage them to a working solution, that they can take the ownership of; they will take it to completion and feel proud of it (52111)”*. YPM and YDM agreed on using negotiation to make changes (5212). However, YDM took a more authoritative approach and declared that, *“you’ve got to challenge when there is a problem and ask for changes; negotiation helps that approach to solve matters in a collaborative way (52121)”*. When it came to addressing health and safety concerns (5213), YCM relied on information which came from subcontractors and suppliers. YSC stated that, *“we look out for health and safety concerns, and incorporate them into work design (52131)”*. YPM and YMC stated their role as facilitator (5214) in bringing parties together to work in a collaborative way. YMC pointed out his role in making sure that the design managers got the design, the best buildable design solution within a reasonable time (52141) and went on to state, *“I work closely with the commercial management, quantity surveying team to make sure that from the procurement point of view, we are procured over trades that we need to procure and we are spending money where we should be spending it, and we are not throwing money away for no reason. It is all about facilitating that communication and*

interaction between our team members (52142)". Members of project Y also presented the notion of community of practice (5215) within the project. YMC pointed out the importance of building a community of practice and went on to state, *"it is getting the team spirit going. If you can get the team spirit, a collaborative approach to move your team, a community of practice will automatically form to perform activities within the site (52151)"*. YCM reinforced this and suggested not creating a 'them and us' (52153) attitude to achieve community of practice. YDM mentioned the inclusion of the design team into the community of practice and stated that, *"we take some of our CAD engineers around the site to show the site. Letting them know the site will encourage and welcome more collaborative behaviour (52152)"*. However YSC showed contradicting interests about his mindset to work within a community of practice. Even though he worked together and achieved common goals (52154), when it came to commercial decision making, he stated that, *"we will do what is good for our company (52155)"*. As shown in Figure 5-17, project Y brought in another specialist (5216) to solve some of the design related issues in addition to the very experienced YDM. YPM pointed out that, *"we may draw upon independent members to discuss issues in design meetings; this gives a new perspective (52161)"*. YDM noted the role of an expert in arbitrating some of the issues in the project (52162). Even though they were minor challenges, the project team was able to put these issues aside and worked in a collaborative way for the other contract related matters.

YMC talked about the balanced power (522) between major parties to the contract, but went on to talk about mechanical and electrical suppliers and subcontractors and mentioned that it was hard to control contractors with a large percentage of work (5221). Mechanical and electrical suppliers and subcontractors are given more than 40% of the total workload in project Y. Furthermore, YMC and YDM agreed on the challenges of traditional adversarial cultural issues within the project. They tackled issues related to an old adversarial culture separately (5222 and 52221). YDM's explanation regarding bringing in another specialist (5216) indicated a different way to achieve balanced power between parties within the project. Some of the comments (52161) from YPM affirmed this notion.

The leadership team members of project Y appreciated the influence of top management (523). YMC and YCM pointed out the importance of visits from national directors

(5231 and 52311). YMC spoke of instances where top management may be required to take higher level, formal decisions (5232 and 52321), especially large claims or changes. He also mentioned the scale of partnering type projects and the claims involved. He went on to propose that *“if you get to a level where there is a massive dispute and there is no even ground between the two, the client and main contractor at a high level will discuss it (523211)”*. YSC agreed with the similar notion in regard to changes in mechanical and electrical specification. Even though there were a few issues related to claims and changes, according to YDM they were minor adjustments. He said that, *“we are left alone because it's going smoothly (5233)”*.

Project Y enjoyed continuity in the key project staff (524). In addition, most of the team members worked together in earlier projects as pointed out by YMC, YCM and YDM. YMC mentioned that, *“I worked with a lot of team members of this contract; we are actually from the last contract. We came up from another large scale public contract, so, we all moved here together (5241)”*. YCM pointed out the role of leadership in the division of labour and management (525) and stated that, *“myself and construction managers normally set people's task of the day or to lads that they are doing such and such. At that point, we explain this time this is changing or that is changing; so it is a question of passing information down (5251)”*.

YPM talked about their continuous role in the selection of parties (526) to the partnering contract. YPM mentioned the large scale public client's procedures in approving suppliers and subcontractors and stated that, *“experienced parties are selected for the job; we have leading M&E and another leading mechanical contractor. We checked out their leadership team (5261)”*. YMC and YCM spoke of the selection of suppliers and subcontractors from a list (5262) which was approved by both clients and the main contractor. YCM reminded that *“we have a very restricted supply chain. One thing the client insists on is that you have to prove a relationship with the supply chain. Basically you don't get the yellow pages out when you need a plasterboard contract. You've got to have the knowledge of these contractors from a health and safety point of view, finance, quality and everything else before selection (52621)”*.

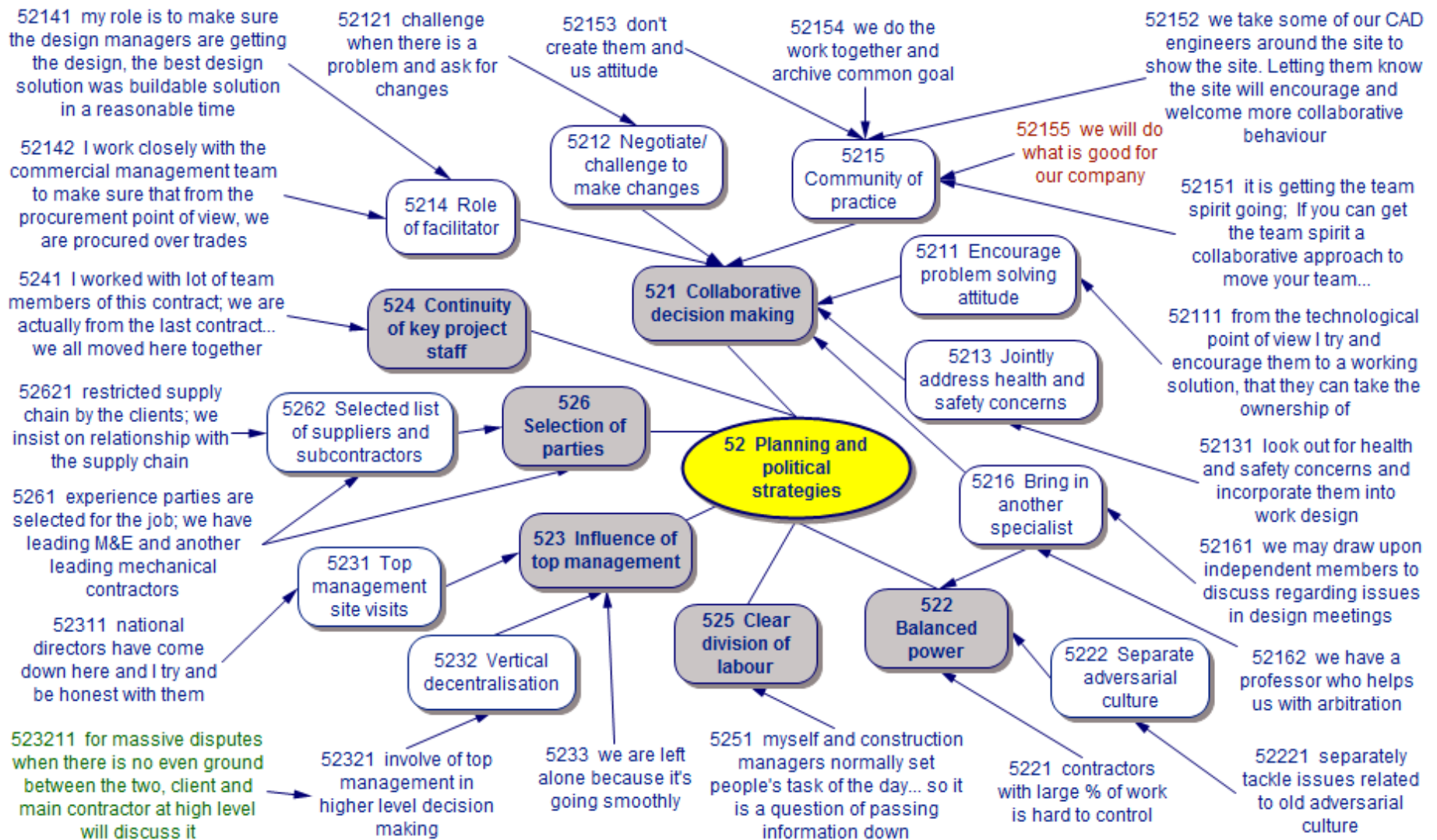


Figure 5-17: Cognitive map of planning and political strategies within project Y

5.3.2.3.2 Routines and controls

The cognitive map in Figure 5-18 represents routines and controls used by the leadership team as part of the continuous embedding mechanisms to address cultural and behavioural challenges in construction partnering projects. Analysis shows that effective communication (531), sharing information (532), risk reduction (533), resource management (534), motivation of parties (535), monitoring progress and issues (536) and risk reduction are major leadership practice areas in this category.

All the interviewees from project Y noted that effective communication was a critical leadership practice to encourage collaboration between the partnering parties. YMC said that, *“if discussing an element of the building, say cladding, then we would bring the cladding contractor into the meeting and he will have his input picked up into the architects drawing and we develop it from there (53111)”*. He went on to point out the need for proactive engagement of the supply chain in discussions (5311 and 53112). YDM and YCM also verified this notion. YMC raised questions regarding challenges in communicating up and emphasised the leader’s ability to communicate up and down the supply chain and project hierarchy (5313 and 53131). YPM advocated that the best way to motivate was to maintain regular communication (5312 and 53121). On the other hand YCM pointed out the need to maintain two-way communication to guide, influence and motivate employees (5314 and 53141). YPM and YMC emphasised communicating at the right time (5315) and YPM went on to explain, *“it is about communicating and making sure people are getting everything they want and everyone is happy (53151)”*. YCM declared the necessity to communicate with clients to solve construction issues (5316) and added, *“part of the reason for dealing with the client's project manager so much is because we have a lot of interfaces and there is lot of break that may disrupt or affect services; so we got to develop close relationships very early on and to find out people are going to accept what you are doing (53161)”*.

Interconnected with communication, sharing information and encouraging others to share information was regarded as one the main leadership practices towards sustaining a collaborative culture. Several members of the leadership team pointed out the level of transparency (5321) they have achieved in project Y when compared to other

construction projects. According to YDM, *“we got a fixed mark up on the job; we know financially where we stand and the client knows financially where we stand; so it is completely open book; it really embraces all the best parts of partnering (53212)”*. However, YPM saw this as way of using rewards to perform variations and stated, *“if the contractor makes a saving we would be able to use that for variations; this can be done only because of an open book policy (532111)”*, clearly indicating a failure to fully embrace the concept of partnering. Furthermore, YCM specifically pointed out that when it came to safety issues, they kept an open door policy (5317 and 53171). According to YMC, YDM and YPM, open sharing of information regarding problems, technological solutions and methodology, is critical to a collaborative approach and project success (53223, 53221 and 53222). YMC went on to mention that, *“if we do things like getting information off contractors and then give it to another contractor, who then rips the other guy's price apart, we will be only able to do that once; we would be shooting ourselves in the foot (53221)”*. YSC affirmed that sharing of information with other parties was fundamental to the partnering contract. Furthermore, YMC, YCM and YSC insisted on the regular technical and engineering updates to share relevant and most recent information with other parties (5323 and 53231).

However, there was little evidence directly related to risk management practices in project Y. The project management team was presented with a risk matrix during the early stages. Interviewees talked about several activities related to risk management practice but failed to link or mention their relevance to risk management. Their focus was on various risk reduction practices (533). YMC pointed out that, *“we market test trade packages and procure at prices with a small margin; so we know where we are; it gives financial certainty; hence with a robust cost plan, it gives clients a financial certainty and it also means the pot of money allocated for risk can be reduced in value (5331)”*.

According to YMC and YCM, resource management was one of the main routine activities to address various challenges (534). YMC pointed out continuous value engineering (5341) as a way to tackle financial constraints (53411) and went on to state that, *“a lot of that is due to the design development and financial constraints, so all the pain is done earlier on... once we agree to a guaranteed maximum price, the button is pressed and we go to site; we will market test all the trade packages on this contract*

(53412)”. YCM indicated the role of various departments in handling resource related constraints (53413). YMC and YCM also noted the practice to regularly project final accounts (5342) to know where the project was in terms of gain pain share. YMC pointed out the drive towards savings in partnering projects and went on to state, “*so our quantity surveyors constantly are projecting the final accounts forward. It's quite a hard game to play, because some contractors will take it that you are only going to get your management fee which you will get and that's it (53421)*”. YSC raised the notion to assist other parties where appropriate and possible, even going outside the terms of contract to build collaborative relationships (5343). He mentioned that, “*if you have a good relationship you can talk to the main contractor and try to find a solution; to extend that relationship and contract you may take a hit; it is all about attitudes (53432)*”. Similarly, YDM pointed out that they did small variations freely to the client especially to build trust and confidence (53431).

Several members of project Y considered various means to motivate parties to achieve better performance. YPM, YMC and YDM considered a long term view and pointed out continuity of contracts to build long standing relationships (5351, 53512 and 53511). YPM and YMC also indicated the 50/50 saving arrangement between parties as another motivational approach towards collaboration (5352). YPM went on to explain that, “*in the events of contractors coming underneath the guaranteed maximum price with all the packages secured as per the original contractors proposals then we will do a 50 - 50 split on savings (535211)*”. YCM considered an operational way to boost workers’ morale and stated, “*rotate jobs to keep the production level at high standard (5353 and 53531)*”, indicating the role of environment in group and team performance. Other personal motivational tools are categorised and analysed under human resource management (54).

According to YCM, monitoring progress and issues was the main routine activity which requires various controls (536). He considered the knock on effects due to delays in one of the trades and how the site activities have to be changed (53612). YMC went on to stress the importance of the financial side of activities and stated that, “*we declare a programme and make sure we adhere to that and also to have an over view of the financial side (53611)*”. Furthermore he went state that “*I work closely with the commercial management, quantity surveying team to make sure that from the*

procurement point of view, we have all the necessary trades (5362 and 53621)”, indicating the emphasis placed on operational activities to monitor performance and delivery. YCM mentioned that when there was a problem in the construction he normally suggested various solutions to improve sequencing of detailed operational activities (5363 and 53631).



Figure 5-18: Cognitive map of routines and controls within project Y

5.3.2.3.3 Human resource management

The cognitive map in Figure 5-19 represents human resource management related leadership practices within project Y.

Concepts and tools related to personal motivation (541) emerge as one of the key areas of leadership practices within the project. YMC and YSC focused on the nurture and growth of staff members (5411) to assist self-belief and confidence. YMC emphasised the nature of the construction industry and stated that, “*sometimes young staff members need quite a bit of nurturing as they don't always know what they want to do, they are new to the industry and it is quite a hard industry (54111)*”. A similar approach was adopted by YSC, who went on to point out the time given to come to the stage of readiness (54113). Also, YPM, YMC and YCM considered awards and recognition (5412 and 54121) to boost performance. YCM stated the delivery and handover of the project as a major recognition for the main contractor and the client (54122). Interestingly, YCM also suggested a performance related bonus for selected trades to improve performance (5413 and 54131). However, YCM and YMC went on to talk about some of the related challenges in providing these short term performance improvement bonuses (541311). YDM and YCM also pointed out a distinction between directly employed workforce and permanent staff members (5414). YDM mentioned that the cultural alignment of these sister companies via vision and mission statements (54141) as a contributing factor to employing a quality and dependable workforce. YDM went on to suggest empowering self motivated staff members (5415 and 54151) for better performance and collaborative working.

Most of the interviewees from Project Y suggested that they enjoyed a healthy charismatic leadership from YMC. YMC and YSC pointed out that the importance in leading by example (5421). YMC went on to suggest that, “*I wouldn't expect someone to do something which I wouldn't do myself... I don't try to issue all the rubbish to the younger staff (54211)*”. Furthermore he pointed out providing support to other parties to the contract (5422). YDM and YSC affirmed this notion indicating a strong collaborative way of working within the project. Importantly, YMC, YCM and YSC presented the notion of an approachable leader to understand and share issues and

challenges (5423 and 54232). YCM mentioned that, *“you’ve got to appear to be human and always make time to speak to people; be recognised as a social individual (54231)”*. Central to YMC leadership quality was to inspire workers (5424). He suggested *“inspire people and team morale to work together and to achieve the finished product (54241)”*. Similar statements were made by YDM, YSC and YCM, which suggested an experienced, knowledgeable, approachable, and strong individual in YMC. Furthermore, YDM stressed the importance of the leader being a good communicator as it is all about integrated team communication (5425 and 54251). YCM emphasised the ability to manage (5426) and went on to say that, *“if you can't manage you can't lead (54261)”*, indicating the ability to understand and implement the operational practices. In addition, from the interviews it was apparent that YPM provided little direction to the construction team and instead gave them as much freedom as possible to operate within the set budget and project plan. With the self motivated, highly skilled and experienced YMC it appeared to be effective for YPM to take a laissez-faire leadership approach and build reciprocal trust.

Team members of project Y promoted partnering as a new way of working and insisted on building collaboration and trust between parties (543). YMC and YCM suggested that employees like to be valued and recognised for their contributions (5431 and 54311). YCM added that he needed to, *“work as a team leader and develop a social workforce where you all feel part of the team, you also feel the need to be needed (54312)”*. YMC expressed a similar notion to prepare staff members to achieve higher performance. YMC and YDM proposed building team spirit (5432 and 54321). YDM expressed the need to build on success to reinforce new working ways (54322). YCM and YMC recommended sharing rewards and recognition (5433) and acknowledging contributions from all parties and workers in the delivery (54331 and 54332). YPM and YCM proposed honest behaviour and pointed out trust worthy subcontractors who were committed to their promises on deliveries (5453 and 54342). YMC mentioned regarding his practices to build personal relationships (5435) and to avoid mistrust and defence building (5436) unlike traditional projects. He stated that, *“it is about being personal, being one to one with people, completely honest, telling them the truth even if it hurts and it’ll get you away from the culture of covering yourself in paper work and hiding in the paper work (54351 and 54361)”*.

YPM suggested promoting open communication upon initial recruitment (54411). Similarly, YMC declared that, “*when you have got a new member of staff, you take them for a walk around the site; tell them what you are doing, what is important to the building and what the drivers are (54412)*”. This showed the importance of changing the culture of new employees via training and assimilation (544), and the introduction to project focus and drivers (5441). While YSC pointed to the use of site induction to reduce risk related factors (5443), YCM declared that it was not given properly and thereby might constitute a missed opportunity to shape a better collaborative culture (54431). YMC, YCM and YSC noted that the training was provided by the main contractor (5442, 54421 and 54422), contrary to some of the suggestions made by reports such as ‘Rethinking Construction’, ‘Accelerating Change’ and other Construction Excellence and Construction Industry Council publications (Egan, 1998; Strategic forum for construction, 2002 and 2007; Wolstenholme, 2009). However, YMC and YPM pointed toward general client road shows and seminars (5444) that provide some of the facilities management technologies and new methodologies to parties to the partnering contract.

YPM, YMC and YDM considered deliberate role modelling (545) to prepare employees. YPM suggested that it is important to manage expectations (5451) and to set up objectives which are achievable (54511). YDM proposed allowing employees to mature and perform (5452), and added the need to, “*provide time to change, mature and get ready to undertake tasks and perform, especially for new comers (54521)*”.

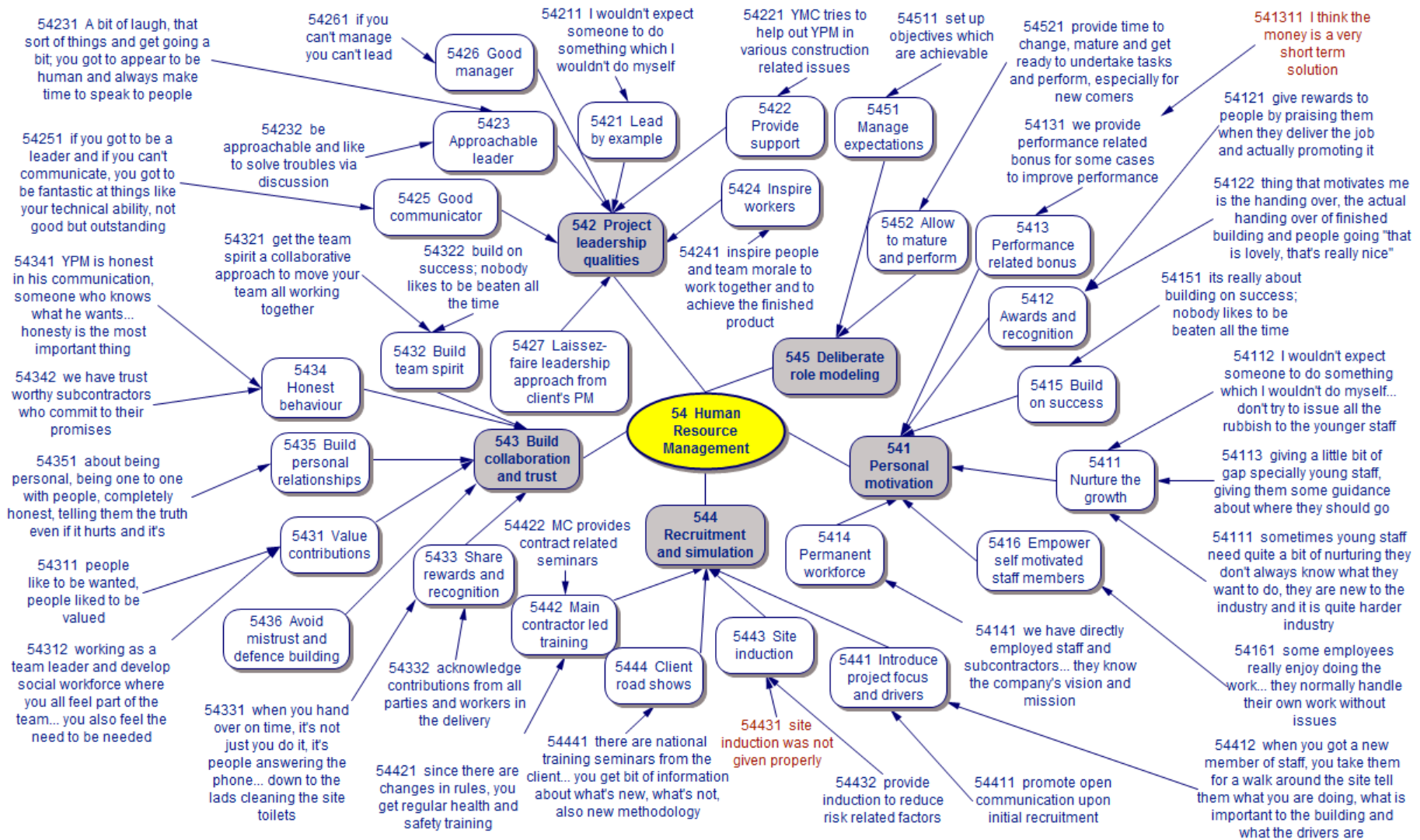


Figure 5-19: Cognitive map of human resource management within project Y

5.3.2.4 Reinforcement mechanisms

5.3.2.4.1 Organisational structure, systems and procedures

As represented in Figure 5-20, the cognitive map of structure, systems and procedures provides further detailed mechanisms used to reinforce collaborative ways of working within project Y. Analysis shows that an information sharing system (551), informal discussions (552), regular reporting and governing measures (553), formal procedures to deliver instructions (554) and project structure (555) were the main leadership practice areas in this category.

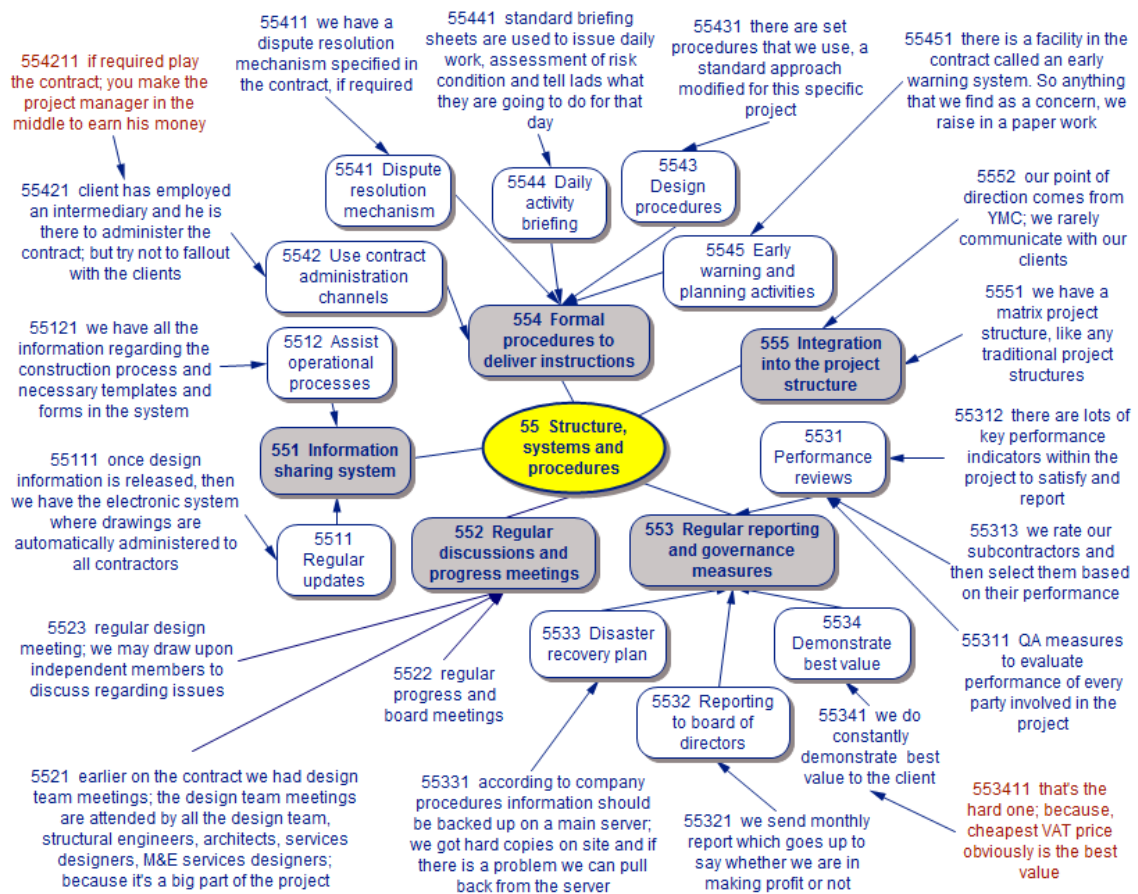


Figure 5-20: Cognitive map of structure, systems and procedures within project Y

It emerged from the analysis that an information sharing system (551) was one of the reinforcing mechanisms to support embedding leadership practices. YMC and YDM suggested regular updates (5511) and YDM went on to state that, “once design information is released, then we have the electronic system where drawings are

automatically administered to all contractors; more than that, it gets issued on a day to day basis through e-mails (55111)". Similarly, YCM indicated its assistance with operational processes by providing necessary templates and forms (5512 and 55121).

Interviewees from project Y pointed out several regular discussions and progress meetings (552) to communicate formally within the project. While YPM mentioned his regular meetings with YMC, YMC talked about his daily meetings with YCM (5522). Besides, YMC stated that, *"earlier on the contract we had design team meetings; the design team meetings are attended by all the design team, structural engineers, architects, services designers, M&E services designers; because it is a big part of the project (5521)"*. These examples suggested the use of regular meetings to reinforce a collaborative working culture within the project. Furthermore, YDM recommended the use of independent experts to resolve tricky construction challenges during regular design meetings (5523).

According to YPM and YDM, project Y was subjected to regular reporting and governance measures (553). YDM pointed out quality assurance measures to evaluate performance of every party involved in the project (5531 and 55311) and YCM declared that, *"we rate our subcontractors and then select them based on their performance (55312)"*. YMC noted that there were several key performance indicators and reviews set up by the clients (55313). According to YSC, parties regularly reported back to their board of directors on their financial position (5532 and 55321). The governance measures demanded a disaster recovery plan (5533). YMC confirmed this and mentioned that, *"according to company procedures, information should be backed up on a main server; we've got hard copies on site and if there is a problem we can pull back from the server (55331)"*. In addition to these measures, the main contractors were asked to constantly demonstrate best value to the client (5534 and 55341). However, YMC pointed out that it was a difficult process as the cheapest price is normally considered as the best value (553411), indicating the presence of one of the main root causes of an adversarial culture within this construction partnering project.

The respondents also indicated several formal procedures to deliver instructions within the project (554). YPM mentioned the use of a dispute resolution mechanism (5541 and 55411) and YMC talked about early warning and planning activities (5545 and 55451).

They also used contract administration channels (5542 and 55421) to resolve some of the issues. YMC went on to state, “if required, play the contract; you make the project manager in the middle earn his money (554211)”. On the subject of design process, YDM talked about the standard design approach and compared it to the modified version that was used within the project (5543 and 55431). Within project Y, instructions to the workforce were delivered via daily activity briefings (5544). YCM used this formal avenue to deliver his morning instructions and stated that, “standard briefing sheets are used to issue daily work, assessment of risk condition and telling lads what they are going to do for that day (55441)”. Furthermore, project Y adopted a matrix project structure where most of the directions came from the contractor’s project manager (555 and 5551). YSC supported this: “our point of direction comes from YMC; we rarely communicate with our clients (5552)”.

5.3.2.4.2 Rites and rituals

The cognitive map shown in Figure 5-21 represents rites and rituals used by the leadership within project Y.

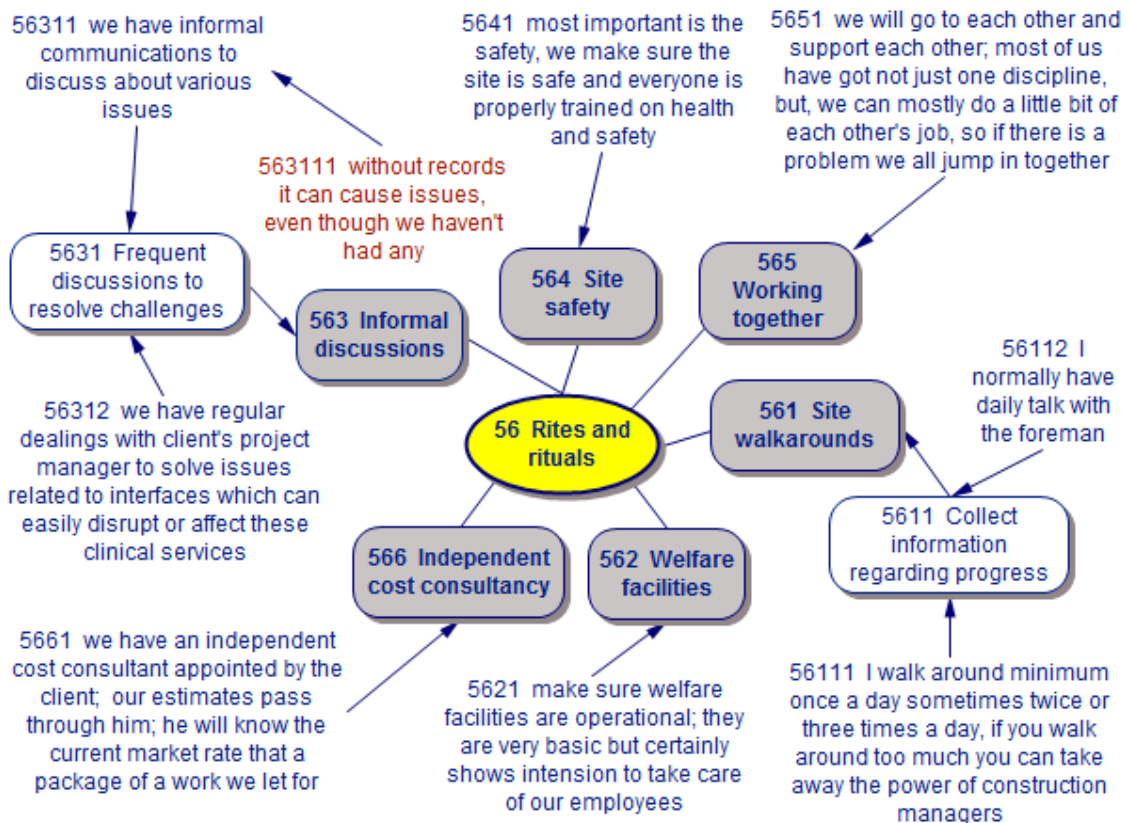


Figure 5-21: Cognitive map of rites and rituals within project Y

According to YMC, site walkarounds (561) were effective ways to collect information regarding progress and enable an immediate response to some of the challenges. He stated that, *“I walk around a minimum of once a day, sometimes twice or three times a day. If you walk around too much you can take away the power of the construction managers; you ask some questions in a certain way, you can find out all the information you need on the spot (5611)”*. YCM and YSC advocated similar ways to gather regular information, regarding progress on various trades. Furthermore, YCM mentioned the importance of welfare facilities (562) and stated a need to, *“make sure welfare facilities are operational; they are very basic but certainly shows intention to take care of our employees (5621)”*.

Furthermore, interviewees from project Y mentioned the use of informal discussion to resolve challenges, especially technical construction related issues (5631, 56311 and 56312). However, YSC pointed out that he had several informal discussions with the project design manager and commercial managers, and without proper recordings it could cause some issues (563111). However, he went on to point out that no such incident has occurred with the project. In addition, safety was considered as the primary focus during operational activities and updated training activities (564) were provided for all the employees for this purpose. This has become a way to reinforce collaboration and care for other parties within the project. Similarly, an approach to ‘work together (565)’ was practiced within project Y. YMC pointed out input from various parties to resolve a particular issue and went on to state that, *“we will go to each other and support each other; most of us have got not just one discipline, but, we can mostly do a little bit of each other's job, so if there is a problem we all jump in together (5651)”*.

Moreover, independent cost consultancy (566) was used within project Y. XDM pointed out that, *“we have an independent cost consultant appointed by the client; our cost estimates pass through him; he will know the current market rate that a package of work we let for (5661)”*. Even though it was not required to get an approval for every trade package, it has become a convention to draw from the knowledge and experience of the cost consultant regarding package costs.

5.3.2.4.3 Stories and symbolic articulations

As represented in Figure 5-22, the cognitive map of stories and symbolic articulations provides further reinforcement mechanisms to influence collaborative ways of working within project Y. Analysis shows that office arrangement and facilities (571), champions and mavericks (572), social events (573), independent committees (574) and the working environment (575) were the main leadership practice areas under this category.

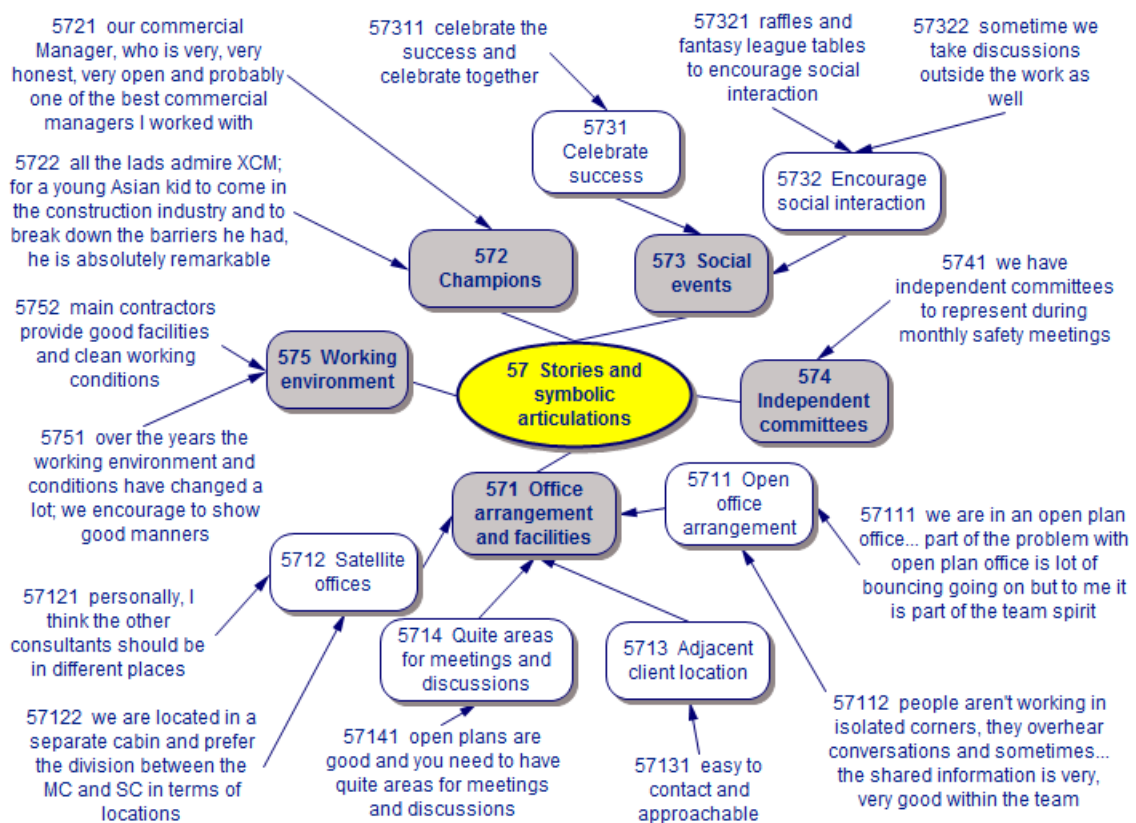


Figure 5-22: Cognitive map of stories and symbolic articulations within project Y

Office arrangements and facilities (571) took the centre stage in representing symbolic articulations to encourage collaborative working ways. YPM, YMC and YDM talked about an open office arrangement and highlighted its benefits. YMC went on to state that, *“we are in an open plan office and have two conference rooms; part of the problem with an open plan office is lot of bouncing going on but to me it is part of the team spirit... people aren't working in isolated corners and the shared information is very, very good (57111 and 57112)”*. YPM and YDM affirmed this notion. However, YDM went on to point out that, *“open plans are good but you need to have quiet areas for meetings and discussions (5714 and 57141)”*, indicating the difficulties in making confidential

discussions with subcontractors and suppliers. YMC mentioned the close proximity of YPM, which made YPM visible and approachable (5713 and 57131). However, all the interviewees expressed the notion of satellite offices (5712) within the project compound for major subcontractors and suppliers. This provided some separation but the closely located position made parties feel comfortable with the arrangements (57121 and 57122).

Furthermore, interviewees talked about champions with the project (572). YMC pointed out YCM and stated that, *“all the lads admire YCM; for a young Asian kid to come in the construction industry and to break down the barriers he had, he is absolutely remarkable (5722)”*. YSC and YCM mentioned the knowledge and experience of YMC. They admitted that these kinds of stories were normal within project Y. Stakeholders within project Y held several social events (573) to celebrate success (5731) and encourage social interaction (5732). YMC talked about celebrating success together (57311). YSC pointed out that parties took some discussions outside the work environment (57322).

According to YCM, there were independent committees to represent monthly safety meetings (574 and 5741), symbolically indicating the representation of the workforce in providing safer site conditions. A similar notion was proposed by XSC, who went on to talk about the working environment (575) and the facilities provided within the project (5752). XCM stated that, *“over the years the working environment and conditions have changed a lot; we encourage (the workforce) to show good manners (5751)”*.

5.3.3 Cross case analysis and refinement of leadership framework

5.3.3.1 Initial embedding strategies

Within case analysis from project X and Y showed similar leadership practices in the area of initial embedding strategies to change to an integrating culture. However, there were differences in some of the categories, as shown in Table 5-5.

The primary focus and vision in both case studies remained the same. However, the leadership team in project X showed a greater concern for employees (see Section 5.3.1.2 and 5.3.2.2). Even though a similar notion was presented in project Y, YMC and YCM clearly indicated health and safety as the driver behind the concern for employees.

Furthermore, compared to project Y, project X showed a more collaborative approach in setting its primary focus and vision. Even though participants from project Y did not comment on a collaborative approach as an initial embedding strategy, they considered it as a new way of working among parties to the partnering contract. Therefore, these practices are likely to help to achieve an integrated team.

Table 5-5: Cross case analysis of initial embedding strategies

Project X	Project Y
Primary focus and vision	Primary focus and vision
Value engineering	Value engineering
Timely delivery	Timely delivery
Concern for employees	Concern for employees from safety point of view
Collaborative approach	
Selling decisions with invited questions	Selling decisions
Selection of Leadership team	Selection of Leadership team
Dedicated team members	
Organisational support	Organisational support
Pride in delivery	Pride in the involved of the project
Cultural alignment	Cultural alignment
Performance	Performance
Previous experience	Leader's experience and knowledge base
	Independent PM
Early involvement of parties	Early involvement of parties
	Engage the entire supply chain
Collaboration via conditions of contract	Collaboration via conditions of contract
Set-up reward systems	Set-up reward systems
Set-up information sharing methods	Specify early warning system
	Set-up design procedures
Pre-start deliberations	Pre-start deliberations
Groundwork and early strategies	Groundwork and early strategies
Corporate governance reporting structure	Corporate governance reporting structure
Stakeholder involvement	Stakeholder involvement

Colour Coding

	Practice available in both cases with a minor difference		Practice only available in one of the cases
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In project Y, partnering and related project decisions were presented to employees and other parties. This could be due to the added authoritative leadership approach shown by some of the team members from project Y.

Several interviewees indicated dedication as an important character of the leadership team in project X. While members of project X took pride in the delivery, members from project Y were intrinsically motivated. They considered involvement in the creation of social good as a reason for higher motivation and pride. With highly experienced YMC and YDM, members of project Y appreciated the knowledge base and experience of the leadership team. These characteristics helped project Y in easily solving several construction related matters and also provided reinforcement to the authority of the leadership team.

In project Y, an independent PM was appointed by the client at the early stages to ensure fair play. However, members of the project Y team had very little contact with him and did not use him to solve many of the matters as they arose. YMC directly declared that *“they employed an independent PM as an intermediary, but you don't really want him there (51342)”* (see Section 5.3.2.2). This was also evident from the comments made by YDM and YCM on barriers to collaborative practices within the project. Hence, the ‘appointment of independent PM’ is not considered as an initial embedding mechanism to improve collaborative practices.

5.3.3.1.1 Consolidating and refining initial embedding strategies

Even though the ‘initial embedding strategies’ category was formed after the case study analysis, themes such as creating a borderless project entity (311), employees to buy-in (322), early involvement of parties (313), pre-start deliberations (314), cultural alignment of parties (315) of ‘planning and political strategies’ from the experts’ opinion, influenced the formation of this category. Hence, the above mentioned categories from the survey interview analysis were compared and analysed together with initial embedding strategies from the case study analysis.

As shown in Figure 5-23 practices such as creating a borderless project entity, providing partnering understanding via partnering showers and risk allocation (see Section 5.2.2.1.1) were not found in the case studies. The case study findings suggest that the introduction of a partnering concept is a difficult process, let alone the introduction to borderless project entity. Even though the borderless project entity concept might be seen to increase the

possibility to change the culture to an integrated team approach, it was not perceived as a viable option among the case study interviewees.

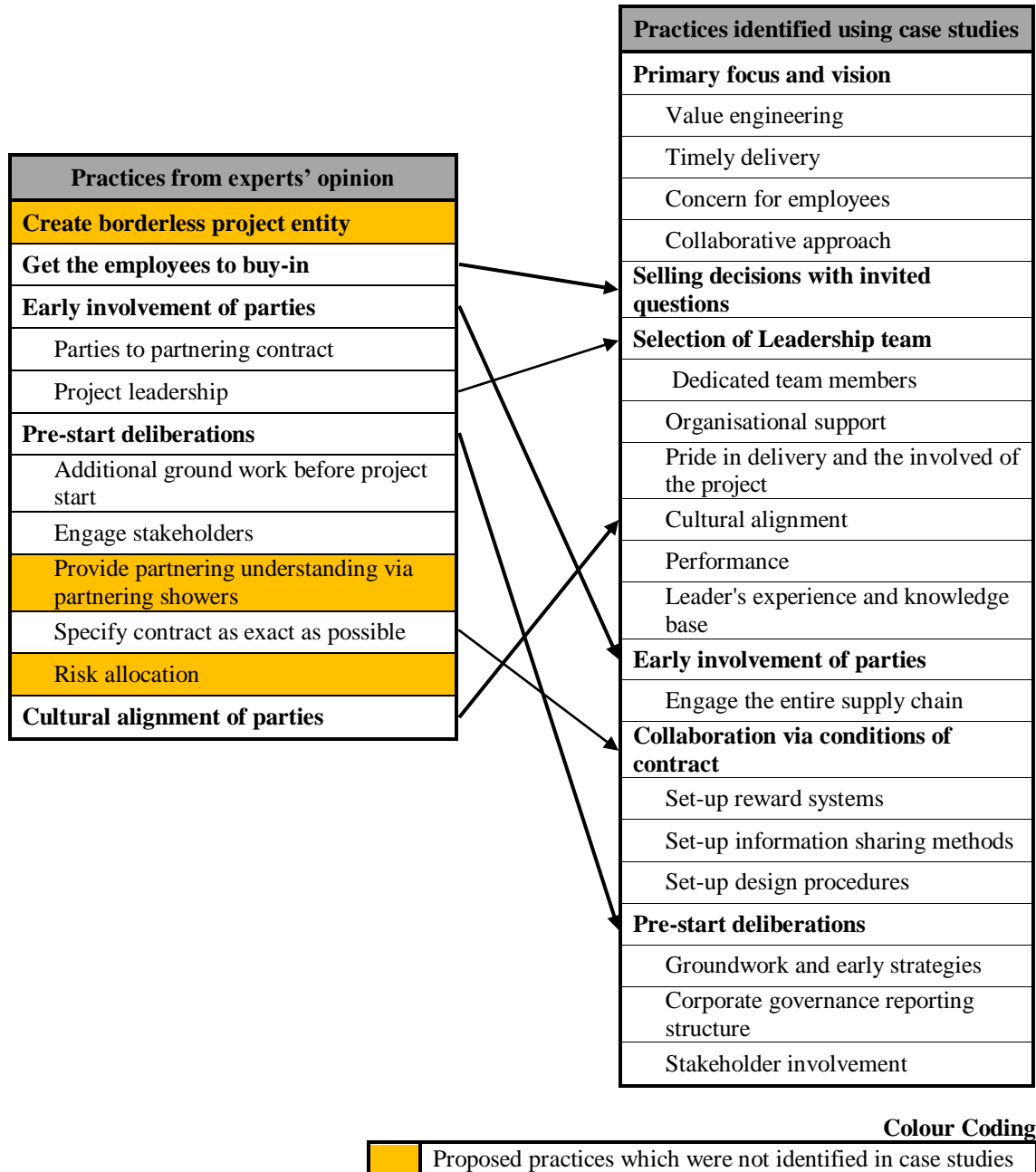


Figure 5-23: Consolidating and refining initial embedding strategies

However, after several years of involvement with the project, interviewees from the case studies could not provide detailed evidence as to the early stage activities. This could be the reason behind the failure to directly identify partnering showers and risk allocation related practices. Even though these were partially mentioned in the case studies under the early strategies of pre-start deliberation, these are considered as important practices and

included into the final framework. Furthermore, these findings suggest that there are several activities that will require separate study at the early stage of construction partnering projects to further understand initial embedding strategies. Considering these adjustments, Table 5-6 shows a final list of initial embedding strategies.

Table 5-6: Refined list of initial embedding strategies

Initial embedding strategies
Primary focus and vision
Value engineering
Timely delivery
Concern for employees
Collaborative approach
Selling decisions with invited questions
Selection of Leadership team
Dedicated team members
Organisational support
Pride in delivery and the involved of the project
Cultural alignment
Performance
Leader's experience and knowledge base
Early involvement of parties
Engage the entire supply chain
Collaborate via conditions of contract
Set-up reward systems
Set-up information sharing methods
Set-up design procedures
Pre-start deliberations
Groundwork and early strategies
Provide partnering understanding via partnering showers
Appropriate risk allocation
Corporate governance reporting structure
Stakeholder involvement

5.3.3.2 Continuous embedding mechanisms

5.3.3.2.1 Planning and political strategies

Planning and political strategies focus on project planning, project structure and power related aspects of leadership practices. As shown in Table 5-7, participants from project X and Y mentioned very similar leadership practices to encourage collaborative decision making, and to achieve a balanced power between parties.

Table 5-7: Cross case analysis of planning and political strategies

Project X	Project Y
Collaborative decision making	Collaborative decision making
Encourage problem solving attitude	Encourage problem solving attitude
Negotiate to make changes	Negotiate/challenge to make changes
Jointly address health and safety concerns	Jointly address health and safety concerns
Role of facilitator	Role of facilitator
	Community of practice
	Bring in another specialist
Balanced power	Balanced power
Respect experience and knowledge	
Empower parties	
	Separate adversarial culture
Influence of top management	Influence of top management
Vertical decentralisation	Vertical decentralisation
Top management site visits	Top management site visits
Continuity of key project staff	Continuity of key project staff
Discuss replacements	
Clear division of labour	Clear division of labour
Encourage to share problems	
Selection of parties	Selection of parties
Selected list of suppliers and subcontractors	Selected list of suppliers and subcontractors

Colour Coding

	Practice available in both cases with a minor difference		Practice only available in one of the cases
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Both project X and project Y showed a very high focus on collaborative decision making and encouraged a problem solving attitude. Once again, due to the added authoritative leadership approach shown by some of the team members from project Y, parties were able to challenge some of the decision making in addition to negotiations. Most

importantly, the leadership team from project Y took this collaborative decision making to the next level by considering the decision making process and discussion as part of a community of practice. Even though there were few difficulties encountered in encouraging this approach (52155), most of the members bought into this concept, which elevated the partnering concept to a better level of collaborative working. Furthermore, to provide a balanced power between parties and to assist collaborative decision making, consultation with specialist/experts was undertaken in project Y. By involving various stakeholders in the specialist/experts the leadership team consolidated their actions. Several leadership authors propose a similar leadership practice to introduce experts/specialists when dealing with tricky issues (John, 2004; Yenming and Siew Kheng Catherine, 2009). Therefore, research considers these practices as important planning and political strategies to influence collaborative ways of working in construction.

In terms of achieving a balance of power, most of the practices were considered under collaborative decision making. However, practices such as empowering parties, respecting experience and knowledge, and separately tackling an adversarial culture, were recognised to help achieve balanced power between parties to the partnering contract.

Both projects recognised the importance of top management and indicated their presence in the project to boost performance. They indicated a vertical decentralisation (4231), where formal power to make choices and authorise decisions was delegated down to the chain of authority, but limited to certain decisions. Even though practices such as joint discussions to find replacements and providing encouragement to share problems were not directly stated within the interviews from project Y, further analysis revealed evidence to similar practices. Hence, these practices were included within planning and political strategies.

5.3.3.2.1.1 Consolidating and refining planning and political strategies

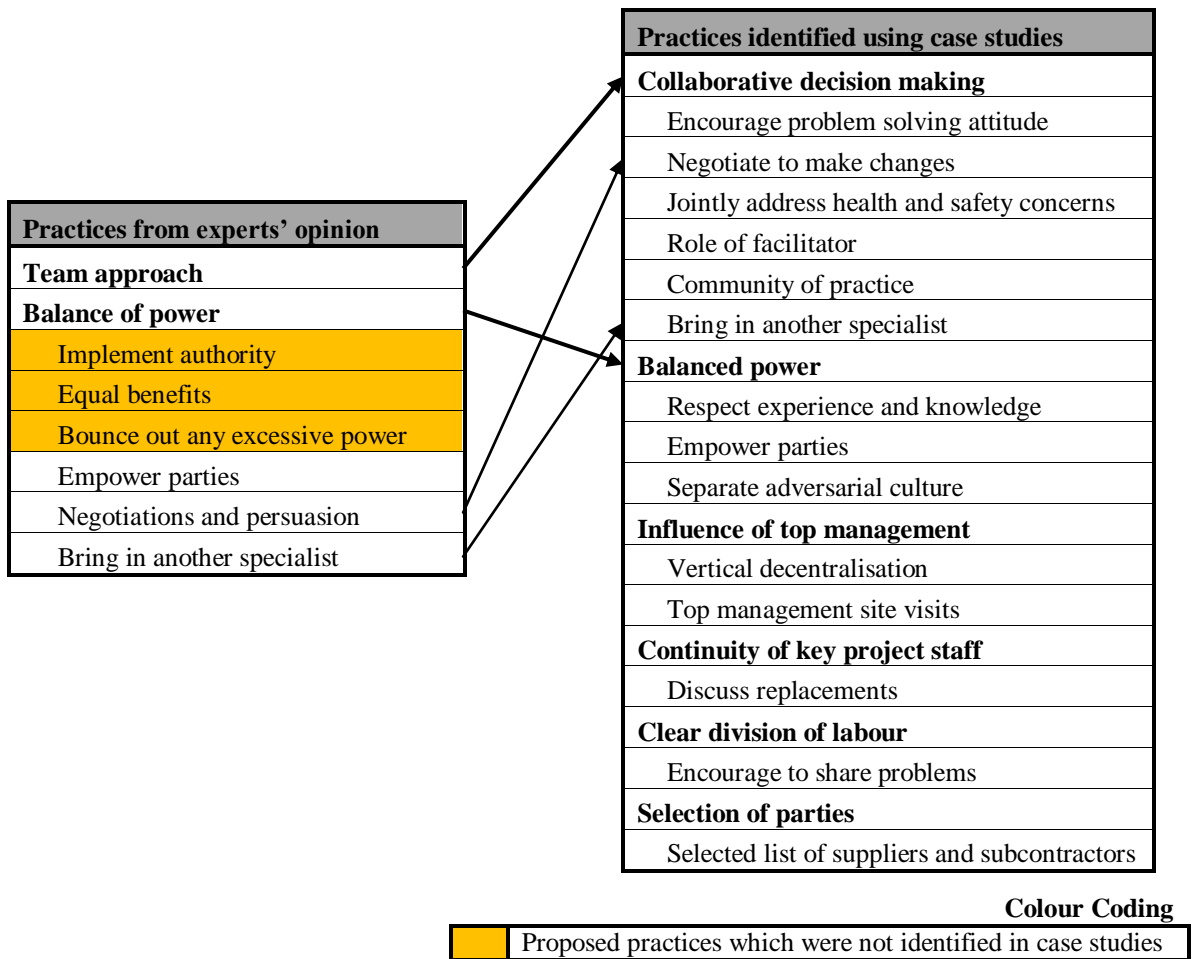


Figure 5-24: Consolidating and refining planning and political strategies

As discussed in Section 5.3 and 5.3.1.3.1, planning and political strategies were treated as part of structural and political strategies in the analysis of expert opinion. Hence relevant parts of structural and political strategies of expert opinion were brought to planning and political strategies to consolidate and to refine leadership practices in this section.

As shown in Figure 5-24, implementing authority, equal benefits and ‘bouncing out’ any excessive power were not identified from the cross case analysis. However, the notion of providing equal benefits was well acknowledged within the case study findings. Considering these amendments, Table 5-8 shows the final list of planning and political strategies.

Table 5-8: Refined list of planning and political strategies

Planning and political strategies
Collaborative decision making
Encourage problem solving attitude
Negotiate to make changes
Jointly address health and safety concerns
Role of facilitator
Community of practice
Bring in another specialist
Balanced power
Respect experience and knowledge
Empower parties
Separate adversarial culture
Provide equal benefits
Influence of top management
Vertical decentralisation
Top management site visits
Continuity of key project staff
Discuss replacements
Clear division of labour
Encourage to share problems
Selection of parties
Selected list of suppliers and subcontractors

5.3.3.2.2 Routines and controls

The cross case analysis of leadership practices from project X and Y are presented Table 5-9. Both cases provided evidence for an elevated emphasis on effective communication and to openly share information.

Effective communication and information sharing took centre stage among the routines and controls of related leadership practices. A proactive approach to engage the supply chain was presented in project Y, which also demanded the inclusion of all relevant parties. Similarly, communicating up and down to the work floor in the hierarchy was considered vital to sharing information and project success in the project. Furthermore, it was proposed to maintain two way communications to build a collaborative relationship. While a regular update of information such as construction drawings, method statements and specifications were regarded as vital ingredients to smooth construction (see Section

5.3.2.3.2), the right flow of information is combined together with the right content and quality, and placed under ‘practices to assist effective communication’.

Table 5-9: Cross case analysis of routines and controls

Project X	Project Y
Effective communication	Effective communication
Inclusion of relevant parties during discussions	Proactive engagement of supply chain in discussions
Maintain regular communication	Maintain regular communication
Communication to the work floor	Communicate up and down
	Maintain two way communication
Communicate at the right time	Communicate at the right time
Communicate to solve construction issues	Communicate to solve construction issues
Share information	Share information
Maintain high level of transparency	Maintain high level of transparency
Share information openly	Share information openly
Maintain right flow of information	Regularly update information
Information at the right time and with the right content and quality	
Risk sharing	Risk reduction
Resource management	Resource management
Continuous value engineering	Continuous value engineering
Control the scope of the project	Constantly project final accounts
	Assist parties where possible
Motivation of parties	Motivation of parties
Continuity of contract	Continuity of contract
Reward savings	Reward savings
Upfront payments to subcontractors	
Demonstrate partnering benefits	
	Boost workers' morale
Monitor progress and issues	Monitor progress and issues
Follow-up activities	
Performance and delivery	Performance and delivery
Cost saving measures	Procure appropriate materials and trade
Suggest solutions	Suggest solutions

Colour Coding

	Practice available in both cases with a minor difference		Practice only available in one of the cases
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As discussed in Section 5.3.3.1.1, there was less evidence regarding the risk management aspects in both projects. This is because both project teams handled most of the risk aspects as given in their risk matrixes during the early stages.

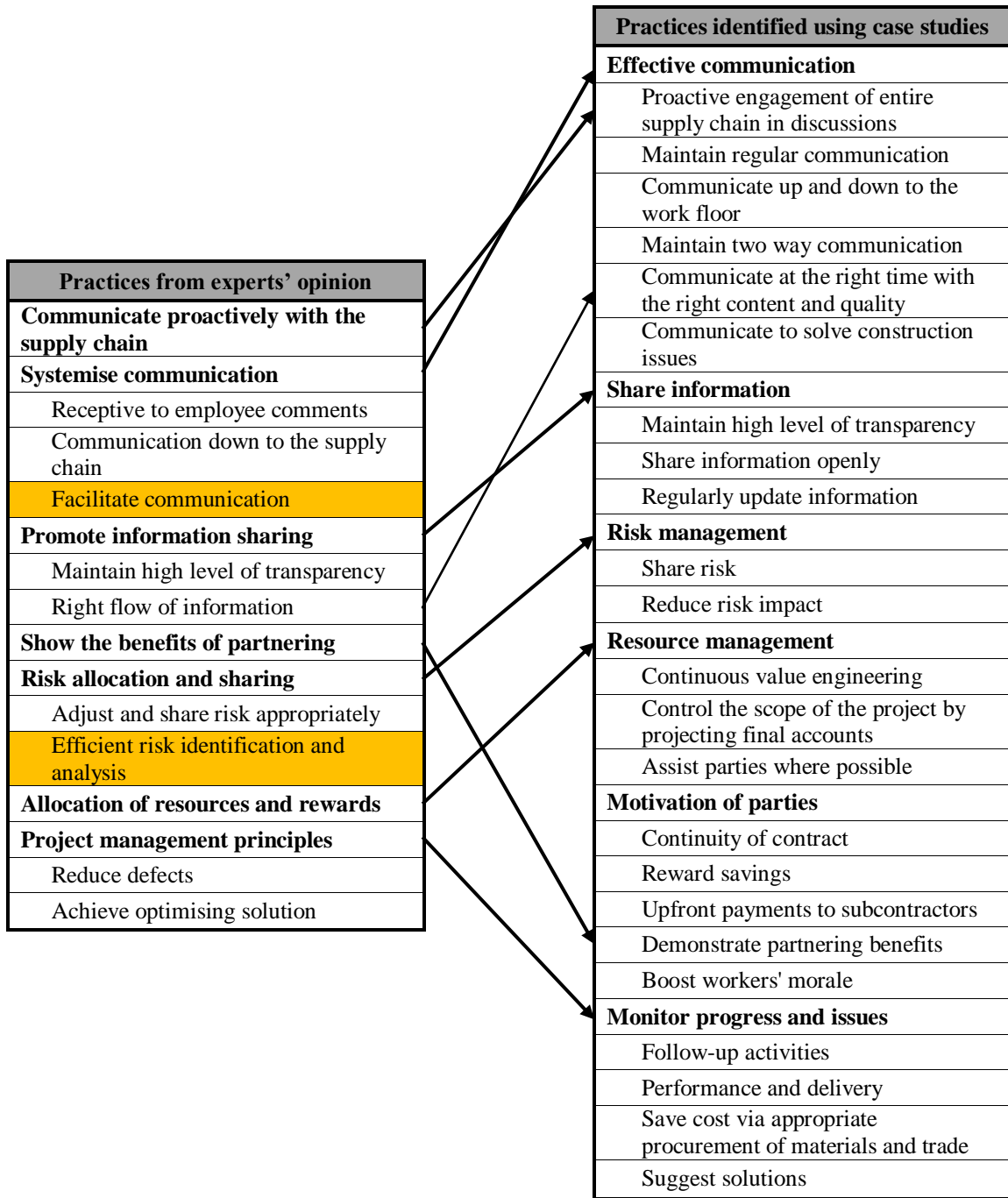
Both project X and Y provided evidence for continuous value engineering to manage resources within the projects. Furthermore, both projects controlled the scope of the project by focusing on final figures. In addition, project Y also presented the notion of an extra step in assisting parties within the framework.

Long term motivation of parties was considered within both projects as regard to continuity of contracts. Due to the procurement arrangements, they also provided rewards via savings, mostly a 50-50 divide. Project X used upfront payments to subcontractors to assist them with cash flow and through sharing and reducing associated risks. Interviewees from project X also pointed out the effects of demonstrating partnering benefits to motivate parties. YCM, YDM and YSC acknowledged YMC's knowledge, experience and authoritative and charismatic leadership approach to project management as reasons behind the morale boost of workers.

Teams from both projects showed concerns over progress and related issues. This approach embedded awareness regarding the progress and timely deliveries, which both projects were able to achieve during their construction phase. While project X supervised progress via follow-up activities, both projects strived to save costs via appropriate procurement of materials and trade.

5.3.3.2.2.1 Consolidating and refining routines and controls

As presented in Figure 5-25, a comparison between experts' opinion and case study analysis shows leadership practices such as facilitating communication, encouraging joint seminars and discussions, avoiding the selection of people with extra baggage and efficient risk identification and analysis were not found in either case. Interviewees from case studies provided evidence to facilitating communication, though they did not directly mention it. As discussed in Section 5.3.3.2.2.1, issues related to risk were not handled by the leadership team in either case study and interviewees offered little evidence regarding these practices. Considering these modifications, Table 5-10 shows the final list of routines and controls.



Colour Coding

	Proposed practices which were not identified in case studies
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Figure 5-25: Consolidating and refining routines and controls

Table 5-10: Refined list of routines and controls

Routines and controls related leadership practices
Effective communication
Proactive engagement of entire supply chain in discussions
Maintain regular communication
Communicate up and down to the work floor
Maintain two way communication
Communicate at the right time with the right content & quality
Communicate to solve construction issues
Facilitate communication
Share information
Maintain high level of transparency
Share information openly
Regularly update information
Risk management
Efficient risk identification and analysis
Share risk
Reduce risk impact
Resource management
Continuous value engineering
Control the scope of the project by projecting final accounts
Assist parties where possible
Motivation of parties
Continuity of contract
Reward savings
Upfront payments to subcontractors
Demonstrate partnering benefits
Boost workers' morale
Monitor progress and issues
Follow-up activities
Performance and delivery
Save cost via appropriate procurement of materials and trade
Suggest solutions

5.3.3.2.3 Human resource management

Table 5-11 presents a comparison of human resource related leadership practices encountered in projects X and Y. While similar practices were found in both cases, there were varied practices in some of the leadership practice areas. Interviewees from project X and Y agreed on providing personal motivational constructs to draw better performance from their workforce. Project X adopted deliberate coaching to instil self-belief and

confidence. Similarly, the leadership team in project Y nurtured their employees towards growth. Both projects used awards and recognition, and the positive behaviour of the permanent employees to boost production and collaboration. While interviewees from project X pointed out the welfare of the work force, team members of project Y indicated performance related bonuses and empowerment of self motivated staff members as other personal motivational constructs. Interestingly, YMC did not encourage performance related bonuses and it was only used in specific areas of construction.

However, there were differences between the leadership qualities adopted in projects X and Y. Importantly, although members of project Y recommended inspiring workers, there was no direct evidence regarding this activity within project X. Even though there was no direct quotation from interviewees of project Y regarding strong internal motivation and self esteem, YMC and YDM projected self-confidence in their knowledge, experience and the ability to perform. Both projects indicated a combination of transformational and transactional leadership practices. However, project Y exhibited qualities such as willingness to listen and entertain new ideas, internal motivation and inspiring workers that were more transformational compared to project X. In addition, the client's project manager in both cases showed a hands-off, laissez-faire leadership approach. They provided little or no direction regarding the operational aspects of the project and provided a considerable degree of freedom and authority to the main contractors' project managers. It seemed to be effective, as noted by interviewees from both projects, because of highly skilled, experienced, and well educated contractors' project managers. Both contractors' project managers had shown pride in their work and the drive to do it successfully on their own.

Interviewees from both projects recognised the need for collaboration and trust building to achieve an integrated team. Interviewees from the projects expressed several informal developmental means to alter employees' behaviour towards collaboration. Even though members of project X considered time and support to develop collaboration and trust, they also used structured and deliberate attempts to influence trust building and to provide an integrated perspective. Members of project Y took deliberate steps to share recognition and build personal relationships. These practices show structured attempts to build trust as leaders from both projects considered collaboration at the heart of a partnering philosophy.

Table 5-11: Cross case analysis of human resource management practices

Project X	Project Y
Personal motivation	Personal motivation
Deliberate coaching to instil self-belief	Nurture the growth
Awards and recognition	Awards and recognition
	Performance related bonus
Permanent workforce	Permanent workforce
	Empower self motivated staff members
Concerns over welfare of the work force	
Project leadership qualities	Project leadership qualities
Lead by example	Lead by example
Fair treatment, respect and support	Provide support
Approachable leader	Approachable leader
Holistic perception	
Provide vision and clear objectives	Good manager
Good communicator	Good communicator
Strong internal motivation	
Self esteem	
Self critical	
	Inspire workers
Laissez-faire leadership approach of client's PM	Laissez-faire leadership approach of client's PM
Collaboration and trust	Collaboration and trust
Mutual respect	
Value contributions	Value contributions
Honest behaviour	Honest behaviour
Provide integrated view	Build team spirit
Provide time and support	
Influence trust building	Build personal relationships
	Share rewards and recognition
	Avoid mistrust and defence building
Recruitment and assimilation	Recruitment and assimilation
	Introduce project focus and drivers
Main contractor led training	Main contractor led training
Site induction	Site induction
	Client road shows
Deliberate role modelling	Deliberate role modelling
Adapt to given situation	
Align people to suitable environment	
Engineer situations to make people to perform	
Manage expectations	Manage expectations
Allow to mature	Allow to mature and perform
Develop responsible work force	
Expose good and bad practices	
Take responsibility for actions	

Colour Coding

	Practice available in both cases with a minor difference		Practice only available in one of the cases
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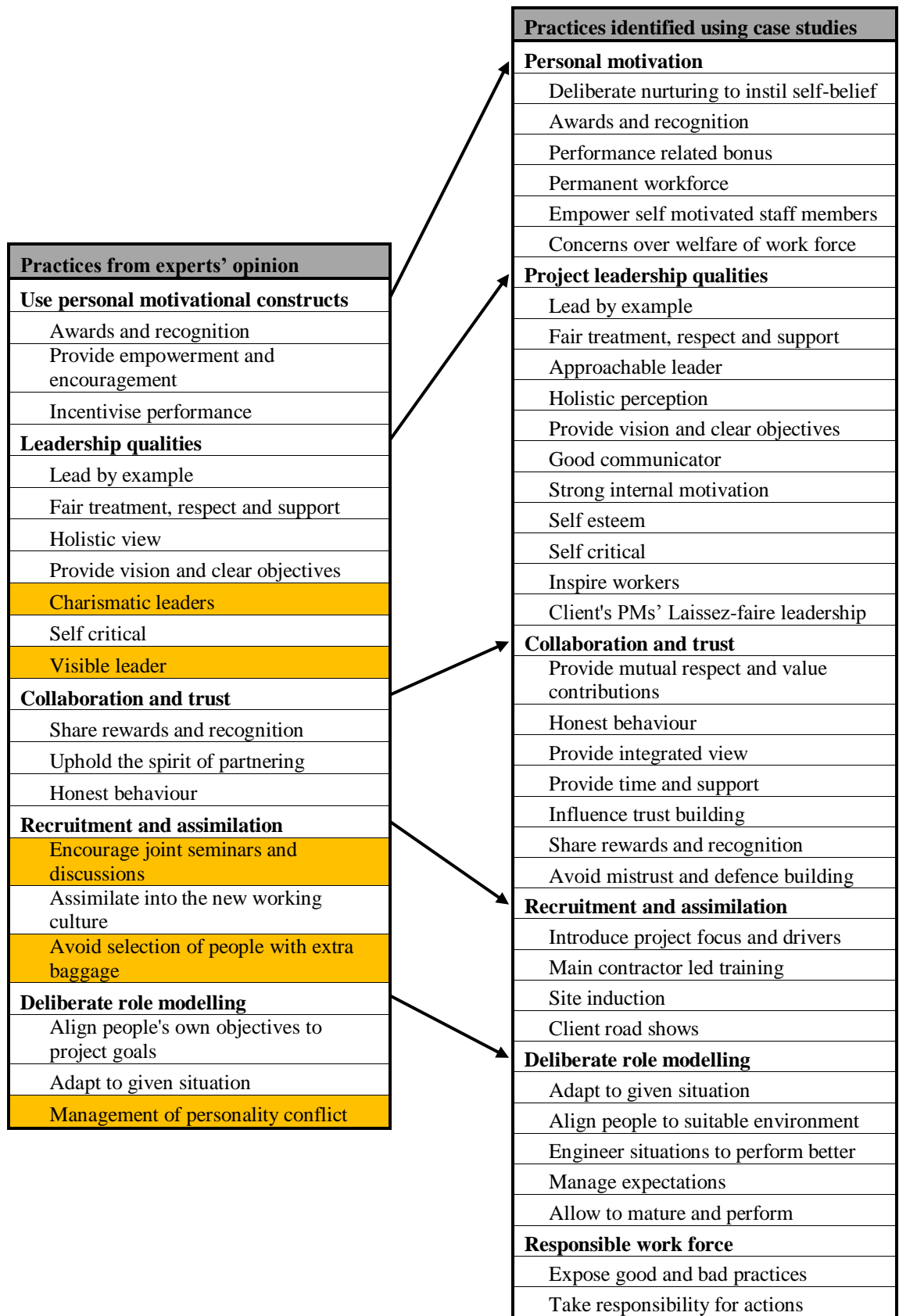
Contrary to some of the proposals made by reports such as ‘Rethinking Construction’, ‘Accelerating Change’ and other Construction Excellence and Construction Industry Council publications (Egan, 1998; Strategic forum for construction, 2002 and 2007; Wolstenholme, 2009), training activities in both projects were carried out by the main contractor. Analysis from project Y also pointed out the introduction of project focus and drivers and client road shows as potential recruitment and assimilation activities to reinforce the concepts of partnering. Client road shows provided some assimilation to the professional employees of the project to help them better understand the nature of the infrastructure project and the partnering philosophy being followed. However, other parties from the project did not indicate these events as influential to their thought process on ways of working.

Furthermore, both projects considered deliberate role modelling to prepare employees to face varied situations within the project. Project X took an engineered approach to coach and adapt employees to perform better. XMC pointed out some of his deliberate attempts to place construction managers to build a strong character to face tough sub contractors.

However, project X and Y varied in their approaches to developing a responsible work force. While this notion was subtle in project Y, project X upheld accountability and responsibility as one of the main duties. This mainly originated from the XMC, but was widely accepted by other members of the leadership team. Interestingly, members of project X exposed bad practices which allowed them to convey symbolic messages on what is expected and not expected by the leadership team. As mentioned by XMC, a fine balance is required when exposing bad practices to a wider audience within the project. These findings suggest development of a responsible work force as a step forward in building collaborative relationships; hence it is considered as part of human resource related leadership practices.

5.3.3.2.3.1 Consolidating and refining human resource related leadership practices

As presented in Figure 5-26, a comparison between experts’ opinion and the case study analysis shows leadership practices such as charismatic leaders, visible leader, encouraging joint seminars and discussions, avoiding the selection of people with extra baggage and management of personality conflict were not mentioned in either case.



Colour Coding
 Proposed practices which were not identified in case studies

Figure 5-26: Consolidating and refining human resource management

The terms charismatic and transformational are often used synonymously by several authors (Shamir *et al.*, 1993), and both theories of leadership emphasise emotions and values (Yukl, 1999). Therefore, leadership qualities such as strong internal motivation, self esteem and inspiring workers can be considered as qualities of a charismatic leader. Although the notion of visible leader was not directly mentioned by the interviewees, it is considered as part of project leadership qualities.

In addition, joint seminars and discussions were not found in the case studies, while they were accepted as potential building blocks for an integrated team. Project X and Y faced challenges in recruitment to fill vacancies and they rejected the idea of ‘avoiding selection of people with extra baggage’. XMC declared that they were desperate for staff and workers and he suggested better training, especially with health and safety and language skills to build up an adequate workforce. Considering these modifications, Table 5-12 shows the final list of routines and controls related leadership practices.

Table 5-12: Refined list of human resource management

Human resource related leadership practices
Personal motivation
Deliberate nurturing to instil self-belief
Awards and recognition
Performance related bonus
Permanent workforce
Empower self motivated staff members
Concerns over welfare of the work force
Project leadership qualities
Lead by example
Fair treatment, respect and support
Approachable leader
Holistic perception
Provide vision and clear objectives
Good communicator
Strong internal motivation
Self esteem
Self critical
Inspire workers
Visible leader
Laissez-faire leadership approach from client's PM

Human resource related leadership practices
Collaboration and trust
Mutual respect
Value contributions
Honest behaviour
Provide integrated view
Provide time and support
Influence trust building
Share rewards and recognition
Avoid mistrust and defence building
Recruitment and assimilation
Introduce project focus and drivers
Main contractor led training
Site induction
Client road shows
Encourage joint seminars and discussions
Deliberate role modelling
Understand and adapt to given situation
Align people to suitable environment
Engineer situations to make people to perform better
Manage expectations
Allow to mature and perform
Management personality conflict
Responsible work force
Expose good and bad practices
Take responsibility for actions

5.3.3.3 Reinforcement mechanisms

5.3.3.3.1 Structure, systems and procedures

As shown in Table 5-13, the cross case analysis of structure, systems and procedures shows similar leadership practices. However, a structured approach was taken in project X to systemise transparency of accounts between the main contractor and major design and build subcontractors.

Both projects shared information via a web based application. Information was regularly updated and in the case of the project X system, this allowed the administrators to set deadlines and targets. This system was used for e-tendering and to draw out backup information in project X. In project Y some of the standard documents were stored within

the system and shared across all relevant parties. These practices enabled parties to regularly share information and to provide standard practices across all parties. Regular discussions and progress meetings were commonly observed in the cross case analysis. Also, projects implemented similar governance measures and regular reporting. While regular audits were noted under the governance measures of project X, the main contractors demonstrated best value on a regular basis to the clients in project Y.

Table 5-13: Cross case analysis of structure, systems and procedures

Project X	Project Y
Information sharing system	Information sharing system
Regular updates and targets	Regular updates
E-tendering	
Backed up and traceability	
	Assist operational processes
Regular discussions and progress meetings	Regular discussions and progress meetings
Regular reporting and governance measures	Regular reporting and governance measures
Performance reviews	Performance reviews
Reporting to board of directors	Reporting to board of directors
Disaster recovery plan	Disaster recovery plan
Regular audits	
	Demonstrate best value
Formal procedures to deliver instructions	Formal procedures to deliver instructions
	Dispute resolution mechanism
Corrective action request process	Use contract administration channels
	Design procedures
	Daily activity briefing
Early warning and planning activities	Early warning and planning activities
Stable work force and integration into the project structure	Integration into the project structure
Open accounting systems	

Colour Coding

	Practice available in both cases with a minor difference		Practice only available in one of the cases
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The partnering philosophy promotes the sharing of information and discussions to resolve any issues within projects. However, both projects presented several formal procedures to deliver instructions. Interviewees noted that these measures helped when there were problems between two parties, to put aside those issues via formal procedures and to continue with their routine works. Interviewees integrated well into the matrix project

structures provided by both projects. Furthermore, interviewees from project X indicated the importance of a stable workforce in moving the project forward.

Interviewees from project X noted a systematic approach to maintain transparency of major design and build subcontractor accounts. This approach was adopted to mitigate some of the budgetary issues expected from the lump sum payment method. Even though project Y embraced transparency of information, there was less inclination towards sharing of cost related information. Since an open accounting system would encourage openness, honesty and collaboration between parties, it is considered as a suitable practice to reinforce the partnering philosophy between parties.

5.3.3.3.1.1 Consolidating and refining structure, systems and procedures

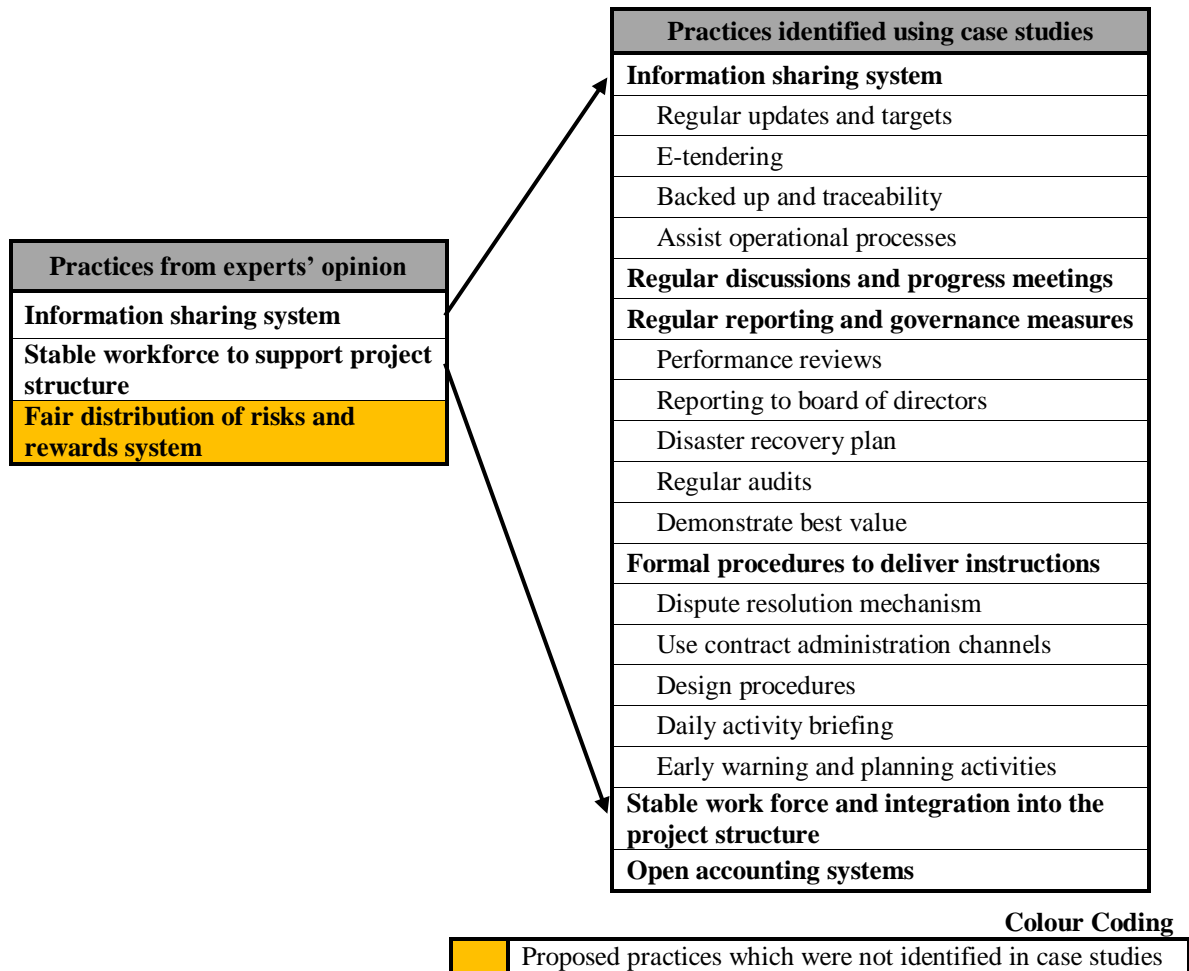


Figure 5-27: Consolidating and refining structure, systems and procedures

As shown in Figure 5-27, experts provided little evidence as to structure, systems and procedures. However, experts proposed a fair distribution of risks and rewards systems to improve collaboration. Project X and Y showed various means to distribute risks and rewards. As discussed in Sections 5.3.1.3.2, 5.3.2.3.2 and 5.3.3.2.2, these were considered under routines and control measures in both projects. Case study analysis did not find any evidence regarding conditions or procedures to implement fair distribution of risks and rewards. It is considered as an appropriate practice that could reduce uncertainty and improve performance. Several authors support the concept of fair distribution of risks and rewards between parties in construction partnering projects (Bresnen and Marshall, 2000c; Cheng *et al.*, 2000; Chan *et al.*, 2004; Li *et al.*, 2005). Considering these modifications, Table 5-14 shows the final list of structure, systems and procedures to reinforce the partnering philosophy in construction partnering projects.

Table 5-14: Refined list of structure, systems and procedures

Structure, systems and procedures
Information sharing system
Regular updates and targets
E-tendering
Backed up and traceability
Assist operational processes
Regular discussions and progress meetings
Regular reporting and governance measures
Performance reviews
Reporting to board of directors
Disaster recovery plan
Regular audits
Demonstrate best value
Formal procedures to deliver instructions
Dispute resolution mechanism
Use contract administration channels
Design procedures
Daily activity briefing
Early warning and planning activities
Stable work force and integration into the project structure
Open accounting systems
Fair distribution of risks and rewards system

5.3.3.3.2 Rites and rituals

Table 5-15 presents a cross case analysis of rites and rituals between projects X and Y. Project managers from both projects made regular site walkarounds. This ritual was indented to show visibility of project leaders and to resolve emerging issues within the projects. While site walkarounds involved relevant parties in project X, it was mainly used to collect information regarding progress in project Y. Furthermore, interviewees from both projects held numerous discussions regarding construction related activities. Importantly, project X used safety training and safety measures to improve collaboration.

Table 5-15: Cross case analysis of rites and rituals

Project X	Project Y
Site walkarounds	Site walkarounds
Involve relevant parties	Collect information regarding progress
Welfare facilities	Welfare facilities
Informal discussions	Informal discussions
	Frequent discussions to resolve challenges
Safety training	Site safety
Collaborative culture via health and safety	
Working together	Working together
	Independent cost consultancy

Colour Coding

	Practice available in both cases with a minor difference		Practice only available in one of the cases
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Independent cost consultancy was used in project Y, which improved the client's trust. Furthermore, it helped to adhere to various governance measures. Even though this practice was not used within project X, this is an appropriate practice that helps to improve trust between parties in partnering projects.

5.3.3.3.2.1 Consolidating and refining rites and rituals

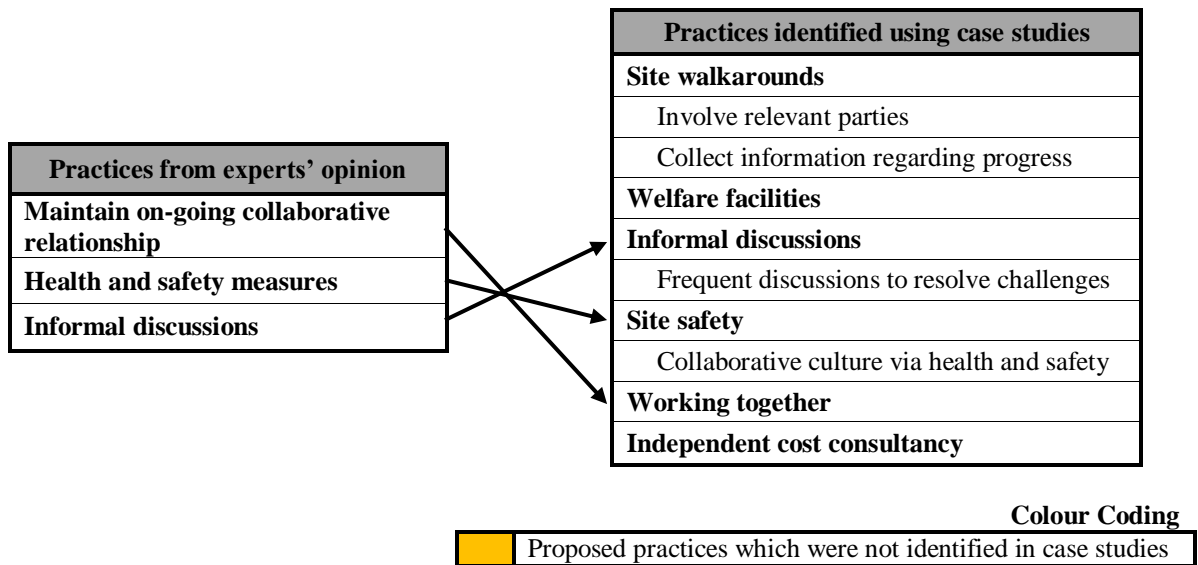


Figure 5-28: Consolidating and refining rites and rituals

As shown in Figure 5-28, interviewees from the case studies provided detailed information on the practices given by the experts. Table 5-16 shows the final list of rites and rituals to reinforce the partnering philosophy in construction partnering projects.

Table 5-16: Refined list of rites and rituals

Rites and rituals
Site walkarounds
Involve relevant parties
Collect information regarding progress
Welfare facilities
Informal discussions
Frequent discussions to resolve challenges
Site safety
Collaborative culture via health and safety
Working together
Independent cost consultancy

5.3.3.3.3 Stories and symbolic articulations

Table 5-17 shows the cross case analysis of stories and symbolic articulations between projects X and Y. The main contribution to symbolic articulations came from office arrangements and facilities. Both cases used these to encourage open and informal

discussions. While the notion of informal discussions was stronger in project X, project Y noted the necessity to have quiet areas for confidential discussions.

There was strong support to expose good and bad practices within project X. They communicated good practices via publications and leaders exposed bad practices to convey undesirable behaviours within the project. However, interviewees from project Y only used good practices to exhibit preferred practices and dealt with bad practices on an individual basis. This type of communication can send strong underlying messages regarding expected behaviours within a project. In addition, project X organised several independent committees and encouraged employees to take some of the decisions on their own. Interviewees pointed out that it has given a better level of trust between parties. Project Y also operated few independent committees for similar purposes. Most importantly, both projects took additional steps to improve the working environment and public image of the construction project.

Table 5-17: Cross case analysis of stories and symbolic articulations

Project X	Project Y
Office arrangement and facilities	Office arrangement and facilities
Open office arrangement	Open office arrangement
Informal areas for discussions	Quiet areas for meetings and discussions
Satellite offices	Satellite offices
Adjacent client location	Adjacent client location
Champions and mavericks	Champions
Communicate good practices via publications	
Social events	Social events
Celebrate success	Celebrate success
	Encourage social interaction
Independent committees	Independent committees
Workforce safety committee	
Safe site and public image	Working environment

Colour Coding

	Practice available in both cases with a minor difference		Practice only available in one of the cases
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5.3.3.3.1 Consolidating and refining stories and symbolic articulations

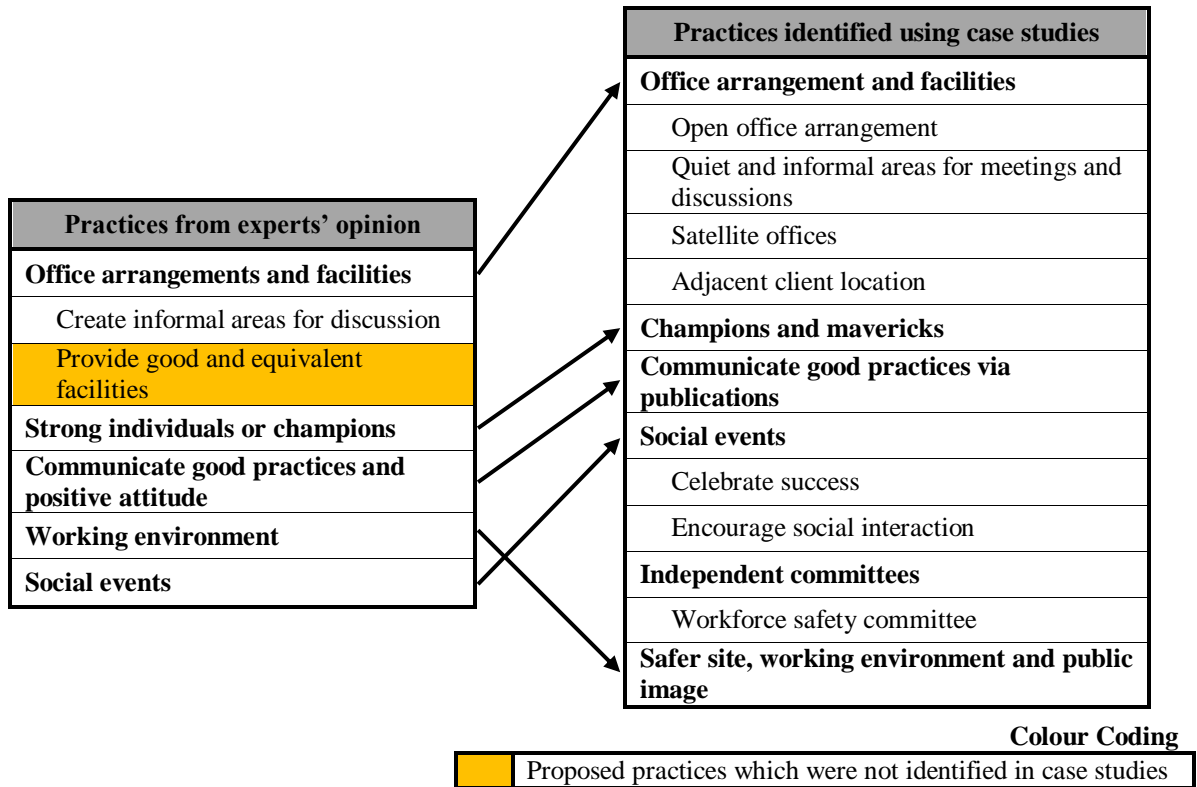


Figure 5-29: Consolidating and refining stories and symbolic articulations

As shown in Figure 5-29, most of the expert opinions were captured within the case study analysis. However, provision of good and equivalent facilities was not mentioned in the case study interviews. Even though interviewees from the case studies noted good facilities for their offices, the notion of equivalent facilities was not discussed during the interviews. This could be due to various levels of subcontractors and suppliers used in the projects. The ‘provision of equivalent facilities wherever possible’ is an appropriate way to improve trust as discussed in Section 5.2.2.2.3. Considering these modifications, Table 5-18 shows the final list of stories and symbolic articulations.

Table 5-18: Refined list of stories and symbolic articulations

Stories and symbolic articulations
Office arrangement and facilities
Open office arrangement
Quiet and informal areas for meetings and discussions
Satellite offices

Stories and symbolic articulations
Adjacent client location
Provide good and equivalent facilities
Champions and mavericks
Communicate good practices via publications
Social events
Celebrate success
Encourage social interaction
Independent committees
Workforce safety committee
Safer site, working environment and public image

5.4 Summary and link

This chapter presented the analysis of expert opinion surveys and case studies. During the analysis of expert interviews, leadership embedding mechanisms were analysed under three categories: structural and political strategies, routines and controls, and human resource management. Reinforcement mechanisms were analysed under organisational structure, systems and procedures, rites and rituals, and stories and symbolic articulations. Upon further examination of axial coding on expert interviews and additional information from case studies, the new category, ‘initial embedding strategies’ was generated (see Section 5.2.2.1.1 and 5.3). The proposed theoretical leadership framework was modified and gradually developed to arrive at the refined list of initial embedding, continuous embedding and reinforcement mechanisms that made the final consolidated framework of integrated leadership practices (see Sections 5.3.3.1.1, 5.3.3.2.1.1, 5.3.3.2.2.1, 5.3.3.2.3.1, 5.3.3.3.1.1, 5.3.3.3.2.1 and 5.3.3.3.3.1). Having analysed and presented the data collected from the expert interviews and case studies, the next chapter brings together and presents the main findings of the empirical investigations of this research.

CHAPTER 6 RESEARCH FINDINGS

6.1 Introduction

This chapter summarises the overall empirical findings of this research. Firstly, the cultural and behavioural challenges and root causes are presented in a cultural web format. Then the leadership practice areas that address cultural and behavioural challenges and root causes are presented within the consolidated leadership framework. This is followed by further details of the leadership practices.

6.2 Cultural and behavioural challenges and root causes

Partnering aims to increase cooperation and integration between the participants by building trust and commitment whilst decreasing disputes (Eriksson *et al.*, 2008). This requires a fundamental change of behaviour and attitudes from all participants involved. Consequently, several studies have emerged to investigate challenges associated with construction partnering projects (Bresnen and Marshall, 2000d; Cheng *et al.*, 2000; Ng *et al.*, 2002a; Chan *et al.*, 2003a; Wood and Ellis, 2005; Phua, 2006; Anvuur and Kumaraswamy, 2007; Gadde and Dubois, 2010a; Tang *et al.*, 2010). As discussed in Section 4.2.1, the UK construction industry needs to look into its internal processes and take remedial action to move towards an integrating culture, rather than continuously altering procurement methods to radicalise integration. As such, this study provides understanding regarding the cultural and behavioural challenges and its root causes in construction partnering projects.

The systematic review method was considered as an appropriate process by which critical literature and underpinning research is rigorously and systematically mapped out (see Section 3.5.1.1). Since this review process is noted for its applicability and suitability for academic research concerned with practical issues, it was carried out to identify ‘construction partnering challenges’ and moved on to unearth ‘root causes of cultural and behavioural challenges in construction partnering’. Its usage with content analysis provides a powerful combined technique for literature review and forms a solid

understanding of the problem in question. This process is explained in detail in Section 3.5.1.1.1.

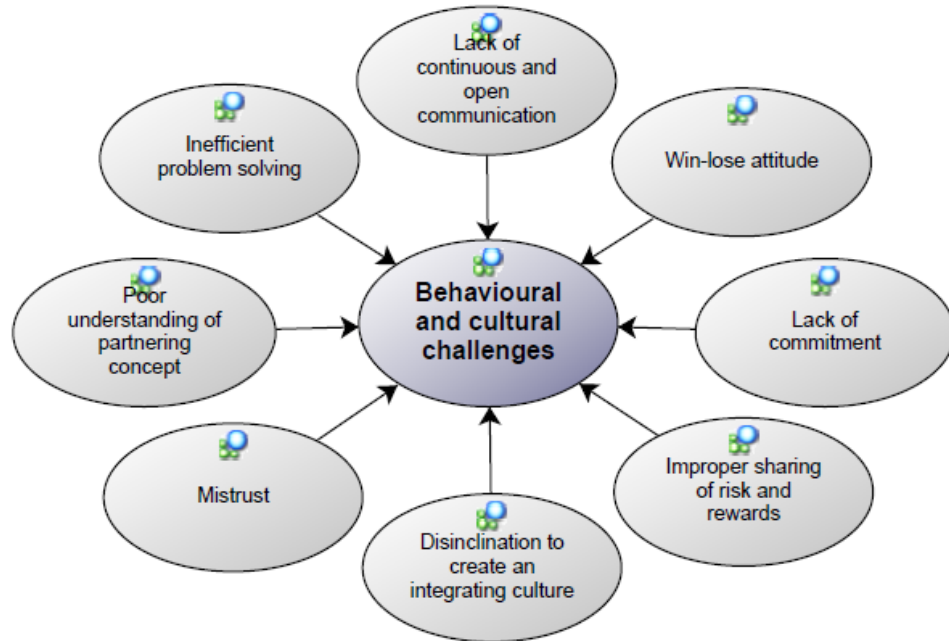


Figure 6-1: Cultural and behavioural challenge areas identified from systematic review method

Various challenges and issues identified via the systematic review method were then categorised and analysed under the 8 major cultural and behavioural challenges, as presented in Figure 6-1 (see Section 4.2.3 for detailed discussions with references). This initial phase of research synthesised the existing knowledge on cultural and behavioural challenges to a manageable format. This was then used to construct the interview questionnaire and guidelines through which root causes of cultural and behavioural challenges were found.

In the experts' interview phase of the research, root causes of cultural and behavioural challenges were identified. A combination of the purposive sampling method, expert sampling and snowball sampling was adopted to select these experts (see Section 3.5.1.2 for further information). Experts' opinion was collected via semi-structured interviews and root causes were drawn by means of code based content analysis. While the opinion of academic experts was gathered to gain a research related perspective, the industry experts' perspective was collected to understand the practical issues and challenges. These root causes were categorised and further analysed on the basis of cultural web elements: rituals and routine; stories; symbols; power; organisational structure; control systems; and, paradigm. As discussed in Section 2.3.2, the cultural web presents a substantial range of

the elements which can be used to understand and manage cultural change. Therefore, looking through the lens of cultural web elements, the research provides a further understanding of cultural and behavioural root causes in construction partnering projects.

Figure 6-2 provides a consolidated list of root causes for the cultural and behavioural challenges in construction partnering projects. Analyses on the academic and industry expert interviews are provided in Sections 4.3.1 and 4.3.2. Most of the root causes expressed by academic and industry experts were similar in nature. However, differences were found in stories, power, controls and paradigm related root causes.

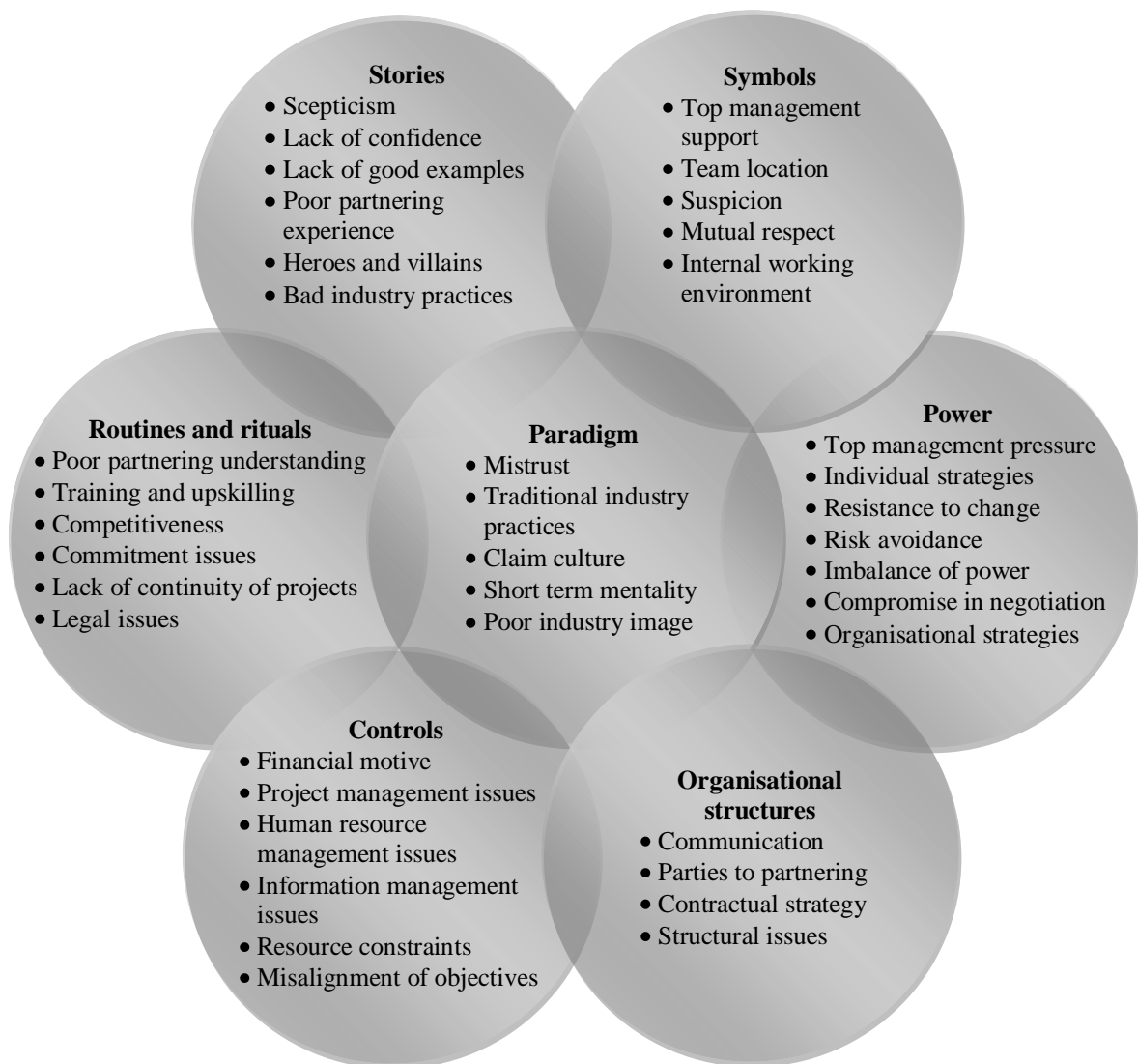


Figure 6-2: Cultural and behavioural root causes in construction partnering projects

Rituals and routine related challenges and root causes

These challenges relate to daily routine activities and reinforcement rituals that make up “the way things are done in construction partnering projects”. Poor partnering understanding, the competitive nature of construction organisations, training and upskilling, commitment issues, a lack of continuity of projects, and legal issues were found as established rituals and routines from both the academic and industry experts’ opinion, which resulted in adversarial cultural behaviours within partnering projects. Sections 4.3.1.2 and 4.3.2.2 provide further detailed analysis on the rituals and routine related challenges and root causes.

Stories related challenges and root causes

Stories related challenges and root causes present conversations between industry professionals that reduce the effectiveness of principles related to partnering. Scepticism, lack of confidence, lack of good examples, poor partnering experience, and heroes and villains were cited by academic experts as stories related root causes. Industry experts did not provide evidence in support of lack of confidence and lack of good examples. However, they revealed stories regarding bad industry practices, which were not mentioned by the academic experts. Consolidating both perspectives, a final list of stories related root causes was constructed. Sections 4.3.1.3 and 4.3.2.3 provide further detailed analysis on stories related challenges and root causes.

Symbols related challenges and root causes

These challenges are associated with symbolic representations. Both academic and industry experts expressed similar root causes; top management support, team location, suspicion, mutual respect, and internal working environment. Sections 4.3.1.4 and 4.3.2.4 provide further detailed analysis on symbols related challenges and root causes.

Power related challenges and root causes

These challenges consider power related root causes that hinder the transformation of the behaviours and increase resistance towards an integrated team approach. Academic experts perceived top management pressure, individual strategies, resistance to change, risk avoidance, and imbalance of power and compromise in negotiation, as the root causes under this category. Interestingly, industry experts did not provide evidence in relation to

top management pressure. However, they went on to mention organisational strategies as another root cause under this category. Consolidating both perspectives, a final list of power related root causes was constructed. Sections 4.3.1.5 and 4.3.2.5 offer further detailed analysis on power related challenges and root causes.

Organisational structure related challenges and root causes

These challenges mainly consider root causes related to partnering project structure and the structural relationship between parties to the partnering contract. Academic and industry experts cited communication, parties to partnering, contractual strategy and structural issues, as organisational structure related root causes from both. Sections 4.3.1.6 and 4.3.2.6 provide further detailed analysis on organisational structure related challenges and root causes.

Control related challenges and root causes

These consider measurements, recognition and reward systems that impede a partnering philosophy from being implemented within partnering projects. Academic experts perceived financial motive, project management issues, human resource management issues, information management issues, resource constraints and misalignment of objectives, as the root causes under this category. However, no direct evidence was found from industry experts on resource constraints. Consolidating both perspectives, a final list of control related root causes was constructed. Sections 4.3.1.7 and 4.3.2.7 offer further detailed analysis on controls related challenges and root causes.

Paradigm related challenges and root cause

These portray the current taken-for-granted assumptions of the construction industry that hamper effective implementation of a partnering philosophy. Mistrust, traditional industry practices, a claims culture and short term mentality were perceived as paradigm related root causes by academic experts. In addition, industry experts recognised poor industry image as another root cause under this category. Consolidating both perspectives, a final list of paradigm related root causes was constructed. Sections 4.3.1.8 and 4.3.2.8 provide further detailed analysis on paradigm related challenges and root causes.

These research findings add to the existing knowledge in partnering challenges (Bresnen and Marshall, 2000d; Chan *et al.*, 2003c; Dixon *et al.*, 2005; Lau and Rowlinson, 2009; Gadde and Dubois, 2010a; Aarseth *et al.*, 2012) by looking into partnering activities through a cultural lens. There is a dearth of studies related to challenges and problems in the cultural web areas such as power, symbols and stories within construction partnering projects. Furthermore, these research findings stand as evidence and provide detailed examples to the messages given by Latham, Egan and Wolstenholme, and the difficulties in changing industry practices using partnering arrangements.

6.3 Leadership practice areas to address cultural and behavioural challenges and root causes

Section 6.2 provides empirical findings on cultural and behavioural challenges and root causes in construction partnering projects. It is essential to bring about cultural change in partnering projects to encourage project participants to transgress the conflicting interests and to build shared culture. Researchers perceive leadership as the source of the beliefs and values that get a group moving with its internal and external challenges (George *et al.*, 1999; Schein, 2004; Hartmann and Khademian, 2010). With this in mind, this study sought to unearth leadership practices that would provide a detailed understanding of the ways and means of addressing cultural and behavioural challenges in construction partnering projects.

As established in Section 2.5, a theoretical leadership framework was developed containing primary embedding mechanisms and secondary reinforcement mechanisms that can be used by leaders to embed and change beliefs, values and assumptions. This theoretical framework was then gradually refined through the expert opinion survey method and the case study method. Upon further examination of expert interviews and additional information from case studies, the new category, ‘initial embedding strategies’ was generated (see Section 5.2.2.1.1 and 5.3). As shown in Figure 6-3, initial embedding strategies, continuous embedding mechanisms and reinforcement mechanisms were established as the main leadership approaches to embed and reinforce culture within construction partnering projects. Embedding mechanisms allow leadership to communicate the core assumptions related to cultural change by establishing criteria for

rewards, resources allocation, promotions and organisational status. Reinforcement mechanisms assist leaders to further articulate and reinforce cultural changes through project design, structure, rites and rituals (Schein, 2004; Schraeder *et al.*, 2005; Nguyen and Mohamed, 2011; Goldman, 2012). These mechanisms guide followers to embrace leaders' values and assumptions, which, in turn, set the working ways of a project.

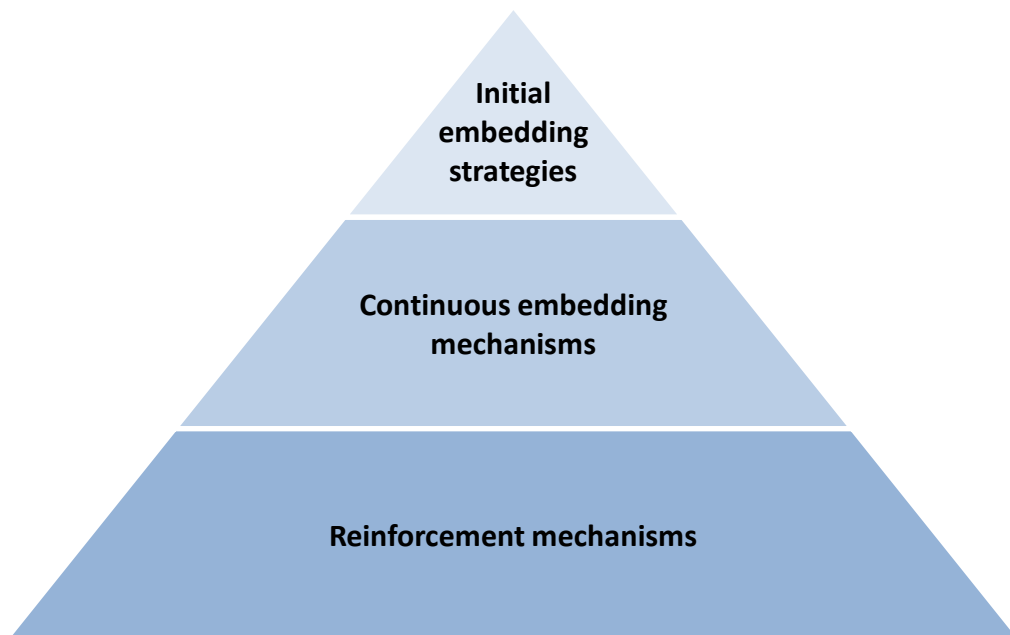


Figure 6-3: Culture embedding and reinforcing mechanisms

Data analysis of expert interviews (see Section 5.2) and case studies (see Section 5.3) resulted in the development and the refinement of leadership practice areas. These areas and associated practices were initially established during the analysis of expert interviews (see Section 5.2.3) and then developed in the course of individual case study analyses. After an evaluation through cross case analysis and a comparison with the findings from expert interviews, the final consolidated leadership practice areas and the associated practices were constructed (see Sections 5.3.3.1, 5.3.3.2.1, 5.3.3.2.2, 5.3.3.2.3, 5.3.3.3.1, 5.3.3.3.2 and 5.3.3.3.3). Figure 6-4 provides a framework of leadership practice areas that address cultural and behavioural challenges and its root causes.

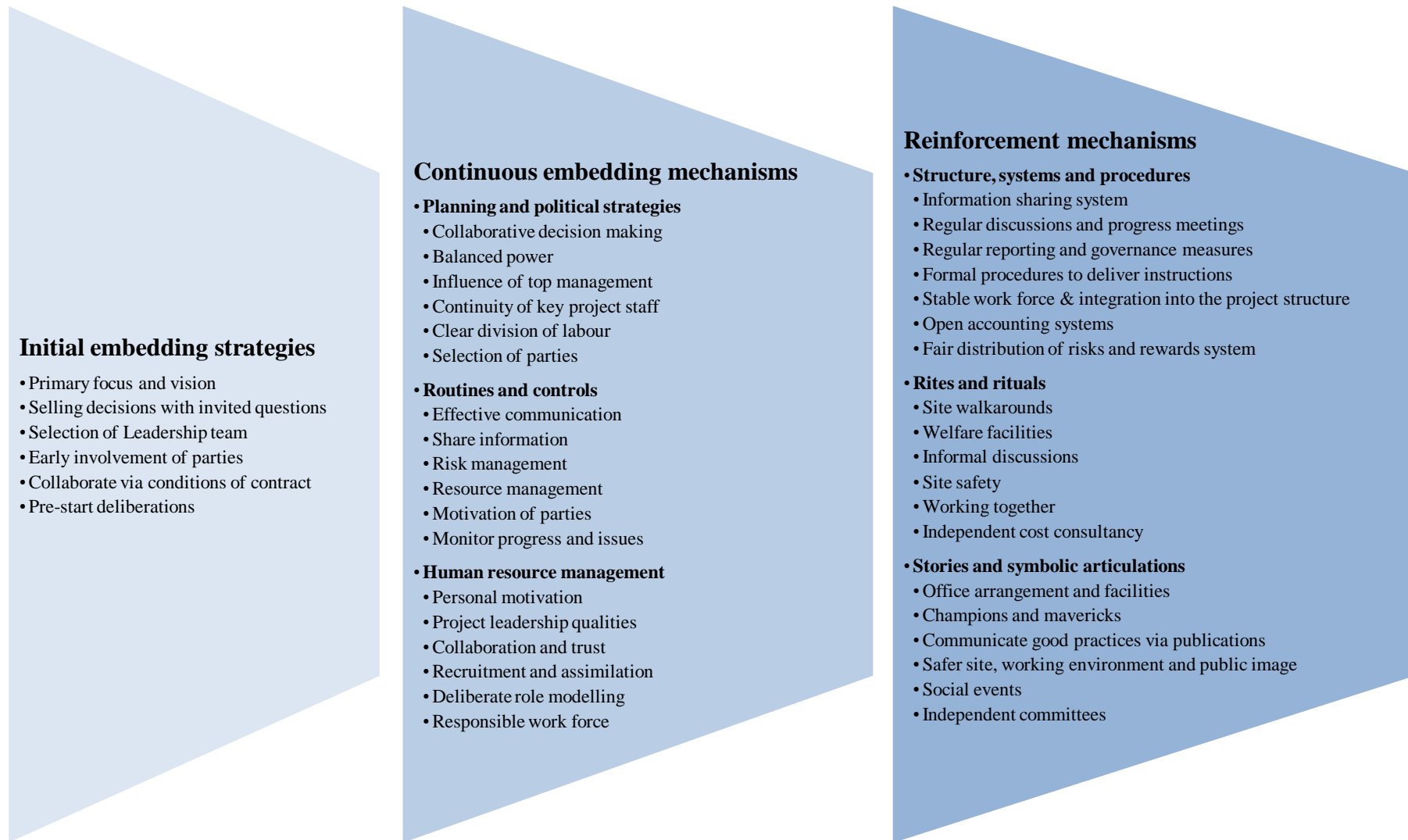


Figure 6-4: Leadership practices that address cultural and behavioural challenges and root causes

6.4 Framework of leadership practices to address cultural and behavioural challenges and root causes

Construction partnering projects require an integrated, collaborative project team performance. However, partnering teams are fragmented due to the nature of construction processes. Leaders often take different leadership styles, and modes of motivation to demonstrate a range of behaviours. In this regard, this research focuses on leadership practices to understand the ways and means of addressing cultural and behavioural challenges in construction partnering projects. Furthermore, the process centred definition of leadership (see Section 2.4.1) enhances this proposition by providing insights to related processes. See Section 2.4.3 for further information about the importance of leadership practices.

In this research, a mix of both deductive and inductive approaches was used to capture leadership practices. The deductive approach was used at the initial stage (by developing research questions and theoretical leadership framework) with a gradual move towards the overall inductive approach (by collection of data, code based analysis and finally building a framework). The following section provides the detailed list of leadership practices and practice areas.

Initial embedding strategies

Through analytical coding on expert interviews and the ‘structural and political strategies’ category of case studies, it emerged that there was a distinct group of codes which only focussed on early stage cultural embedding mechanisms. These codes were separated from the ‘structural and political strategies’ category and introduced into the initial embedding strategies. These mechanisms include early stage/initial practices that focus on what leaders pay attention to and how they set up a partnering arrangement. Value engineering, timely delivery, early selection and cultural alignment of the leadership team, organisational support, engagement of the entire supply chain, early strategies on reporting structure and stakeholder involvement emerged as the commonly perceived initial embedding strategies (see Sections 5.3.1.2, 5.3.2.2 and 5.3.3.1). Table 6-1 shows the final list of initial embedding strategies.

Table 6-1: Final list of leadership practices related to initial embedding strategies

Primary focus and vision
Value engineering
Timely delivery
Concern for employees
Collaborative approach
Selling decisions with invited questions
Selection of Leadership team
Dedicated team members
Organisational support
Pride in delivery and the involved of the project
Cultural alignment
Performance
Leader's experience and knowledge base
Early involvement of parties
Engage the entire supply chain
Collaborate via conditions of contract
Set-up reward systems
Set-up information sharing methods
Set-up design procedures
Pre-start deliberations
Groundwork and early strategies
Provide partnering understanding via partnering showers
Appropriate risk allocation
Corporate governance reporting structure
Stakeholder involvement

Continuous embedding mechanisms

Continuous embedding mechanisms include cultural embedding practices that leaders use during a construction partnering project, particularly in the pre-construction and construction phases. These mechanisms allow leadership to communicate the core assumptions related to cultural change by establishing criteria for rewards, resource allocation, recruitment, selection, promotions and organisational status (Schein, 2004). Continuous embedding mechanisms consist of planning and political strategies, routines and controls, and human resource management related leadership practices. Research findings show that these embedding mechanisms were used throughout a project to transmit leaders' values and assumptions regarding the partnering philosophy.

Planning and political strategies

Planning and political strategies focus on project planning, project structure and power related aspects of leadership practices. The findings of this study indicate collaborative decision making, a problem solving attitude, joint addressing of health and safety concerns, a facilitating role, vertical decentralisation of decision making, top management site visits, clear division of labour and maintaining a list of selected subcontractors and suppliers, as planning and political strategies (see Sections 5.3.1.3.1, 5.3.2.3.1 and 5.3.3.2.1). Table 6-2 represents the final list of practices associated with planning and political strategies.

Table 6-2: Final list of leadership practices related to planning and political strategies

Collaborative decision making
Encourage problem solving attitude
Negotiate to make changes
Jointly address health and safety concerns
Role of facilitator
Community of practice
Bring in another specialist
Balanced power
Respect experience and knowledge
Empower parties
Separate adversarial culture
Provide equal benefits
Influence of top management
Vertical decentralisation
Top management site visits
Continuity of key project staff
Discuss replacements
Clear division of labour
Encourage to share problems
Selection of parties
Selected list of suppliers and subcontractors

Routines and controls

Routines and controls consist of day to day management practices and controls and allocation of resources, rewards and status. They focus on partnering specific 'ways we do things around here'. Maintaining regular communication, providing information at the

right time to solve construction issues, openly sharing information with a high level of transparency, continuous value engineering, motivation through continuity of contract, reward saving, vertical decentralisation, monitoring performance and suggesting solutions to solve construction issues, emerged as the commonly perceived routines and controls related leadership practices (see Sections 5.3.1.3.2, 5.3.2.3.2 and 5.3.3.2.2). The final list of leadership practices related to routines and controls is provided in Table 6-3.

Table 6-3: Final list of leadership practices related to routines and controls

Effective communication
Proactive engagement of entire supply chain in discussions
Maintain regular communication
Communicate up and down to the work floor
Maintain two way communication
Communicate at the right time with the right content & quality
Communicate to solve construction issues
Facilitate communication
Share information
Maintain high level of transparency
Share information openly
Regularly update information
Risk management
Efficient risk identification and analysis
Share risk
Reduce risk impact
Resource management
Continuous value engineering
Control the scope of the project by projecting final accounts
Assist parties where possible
Motivation of parties
Continuity of contract
Reward savings
Upfront payments to subcontractors
Demonstrate partnering benefits
Boost workers' morale
Monitor progress and issues
Follow-up activities
Performance and delivery
Save cost via appropriate procurement of materials & trade
Suggest solutions

Human resource management

Human resource management practices focus on people management aspects of leadership, including role modelling, teaching and coaching, leadership qualities that encourage cultural change, motivational measures, selection and training. Awards and recognition, a permanent workforce, honest behaviour, integrated perceptions, main contractor led training, site inductions, managing expectations and exhibiting a full range of leadership qualities were identified as human resource management related leadership practices (see Sections 5.3.1.3.3, 5.3.2.3.3 and 5.3.3.2.3). Researchers perceive that transformational leadership augments transactional management practices (Lowe *et al.*, 1996; Lory, 2003). According to Bass and Bass (2009), these two broad categories of leadership behaviour are distinct but not mutually exclusive. The research findings indicate that a full range of leadership behaviour will be required to tackle cultural and behavioural challenges and root causes in construction partnering projects. Table 6-4 shows the final list of leadership practices related to human resource management.

Table 6-4: Final list of leadership practices related to human resource management

Personal motivation
Deliberate nurturing to instil self-belief
Awards and recognition
Performance related bonus
Permanent workforce
Empower self-motivated staff members
Concerns over welfare of the work force
Project leadership qualities
Lead by example
Fair treatment, respect and support
Approachable leader
Holistic perception
Provide vision and clear objectives
Good communicator
Strong internal motivation
Self esteem
Self-critical
Inspire workers
Visible leader
Laissez-faire leadership approach from client's PM
Collaboration and trust
Mutual respect
Value contributions

Honest behaviour
Provide integrated view
Provide time and support
Influence trust building
Share rewards and recognition
Avoid mistrust and defence building
Recruitment and assimilation
Introduce project focus and drivers
Main contractor led training
Site induction
Client road shows
Encourage joint seminars and discussions
Deliberate role modelling
Understand and adapt to given situation
Align people to suitable environment
Engineer situations to make people to perform better
Manage expectations
Allow to mature and perform
Management personality conflict
Responsible work force
Expose good and bad practices
Take responsibility for actions

Reinforcement mechanisms

Reinforcement mechanisms articulate/reinforce a culture that is already embedded and include project design and structures, physical arrangement of work space and stories about important events and people. These mechanisms are not designed to create or alter culture. They perpetuate assumptions leaders are trying to change through their behaviours (embedding mechanisms) (Lory, 2003; Schein, 2004). The findings of this study show three main categories of reinforcement mechanisms: ‘structure, systems and procedures’, ‘rites and rituals’ and ‘stories and symbolic articulations’. Case study findings indicate that leaders considered and used these mechanisms effectively during the project to promote an integrated working culture and to reinforce the partnering philosophy.

Structure, systems and procedures

Structure, systems and procedures are about project organisational structures and adopted systems and procedures that employees use for routine activities and reporting. Regular performance reviews, reporting to the board of directors, disaster recovery planning, early

warning systems and a common information sharing platform were identified as structure, systems and procedures related leadership practices (see Sections 5.3.1.4.1, 5.3.2.4.1 and 5.3.3.3.1). The final list of leadership practices associated with structure, systems and procedures is presented in Table 6-5.

Table 6-5: Final list of leadership practices related to structure, systems and procedures

Information sharing system
Regular updates and targets
E-tendering
Backed up and traceability
Assist operational processes
Regular discussions and progress meetings
Regular reporting and governance measures
Performance reviews
Reporting to board of directors
Disaster recovery plan
Regular audits
Demonstrate best value
Formal procedures to deliver instructions
Dispute resolution mechanism
Use contract administration channels
Design procedures
Daily activity briefing
Early warning and planning activities
Stable work force and integration into the project structure
Open accounting systems
Fair distribution of risks and rewards system

Rites and rituals

Rites and rituals include customary habits and ritualistic behaviours that focus on consolidating a collaborative culture within the partnering arrangements. Site walkarounds, maintenance of welfare facilities, informal discussions and a climate of working together became apparent as rites and rituals related leadership practices from the analysis (see Sections 5.3.1.4.2, 5.3.2.4.2 and 5.3.3.3.2). The final list of rites and rituals related leadership practices is presented in Table 6-6.

Table 6-6: Final list of leadership practices related rites and rituals

Site walkarounds
Involve relevant parties
Collect information regarding progress
Welfare facilities
Informal discussions
Frequent discussions to resolve challenges
Site safety
Collaborative culture via health and safety
Working together
Independent cost consultancy

Stories and symbolic articulations

Stories and symbolic articulations include stories about certain individuals and symbolic arrangements such as physical work environment, behaviour and language associated with change agents and other symbolic articulations embedded with the process. An open office arrangement, satellite offices, an adjacent client location, celebratory events and independent committees emerged as stories and symbolic articulations (see Sections 5.3.1.4.3, 5.3.2.4.3 and 5.3.3.3.3). Table 6-7 shows the final list of leadership practices associated with stories and symbolic articulations.

Table 6-7: Final list of leadership practices related to stories and symbolic articulations

Office arrangement and facilities
Open office arrangement
Quiet and informal areas for meetings and discussions
Satellite offices
Adjacent client location
Provide good and equivalent facilities
Champions and mavericks
Communicate good practices via publications
Social events
Celebrate success
Encourage social interaction
Independent committees
Workforce safety committee
Safer site, working environment and public image

6.5 Summary and link

Having presented the key findings of this study, the next chapter presents conclusions of the study by linking the objectives of the study with the overall research findings through literature and empirical investigation. The theoretical and practical implications made by the study are also presented.

CHAPTER 7 CONCLUSIONS

7.1 Introduction

This thesis commenced with an introduction in Chapter 1, followed by Chapter 2, which discussed and synthesised the main concepts and issues of the study through a critical literature review and presented the proposed theoretical leadership framework. This was followed by the research methodology presented in Chapter 3. The research analysis on cultural and behavioural challenges, and their root causes in construction partnering projects was presented in Chapter 4, and followed by Chapter 5, which presented the analysis on leadership practice areas and leadership practices that address cultural and behavioural challenges in construction partnering projects. Chapter 6 then presented the overall findings of this research.

In this context, this chapter presents the overall conclusions of the thesis by presenting and summarising the results of the research objectives identified at the beginning of the study. Accordingly, the beginning this chapter summarises the research aim and objectives followed by the findings for each objective of the study. Then, the contribution to knowledge is presented by explaining the implications of research on theory and practice, followed by the limitations of the study. Finally, further research areas emerging from this study are drawn.

7.2 Summary of research aim and objectives of the study

As stipulated in Chapter 1, this study identified and investigated appropriate leadership practices that address cultural and behavioural challenges associated with construction partnering projects. In achieving this aim, the research explored the underlying concepts such as partnering, culture and leadership, and established their interconnection and interdependency (see Chapter 2). To address this aim, the following objectives were formulated and investigated through literature review and empirical investigation:

1. Investigate the cultural and behavioural challenges in construction partnering projects (see Sections 2.2.5 and 4.2.3)

2. Identify the root causes of cultural and behavioural challenges in construction partnering projects (see Sections 4.3 and 6.2)
3. Establish ‘leadership practice areas’ to address cultural and behavioural challenges and its root causes in construction partnering projects (see Chapter 5 and Sections 2.5 and 6.3)
4. Evaluate ‘leadership practices’ to address cultural and behavioural challenges and its root causes in construction partnering projects (see Sections 5.2.3 and 5.3.3)
5. Develop a framework of leadership practices to address the root causes of cultural and behavioural challenges in order to embed and reinforce a collaborative culture within construction partnering projects (see Chapter 5 and Sections 2.5 and 6.4).

The next section presents a summary of the key findings in relation to these objectives.

7.3 Summary of key findings

7.3.1 Objective 1: Investigate the cultural and behavioural challenges

Successive industry sponsored independent reviews have emphasised the need to improve the culture, attitude and working practices of the UK construction industry. Partnering, as a philosophy, aims to increase cooperation and integration between the participants to achieve a collaborative culture. Therefore, central to the partnering philosophy is the change in attitudinal and behavioural characteristics towards mutual trust and understanding. However, several researchers have pointed out the significance of cultural and behavioural challenges inhibiting the adoption of mutual trust and understanding (see Sections 2.2.5 and 2.2.6).

Initially the systematic review method was used to identify studies that investigated ‘construction partnering challenges’ in general (see Section 4.2). These studies were then analysed using coding and content analysis to arrive at cultural and behavioural challenges in construction partnering projects (see Section 4.2.3). The research findings show eight major cultural and behavioural challenges: improper sharing of risk and rewards, inefficient problem solving and continuous improvement, lack of commitment, lack of continuous and open communication, mistrust, poor understanding of the partnering

concept, reluctance to change to an integrating culture and a win-lose attitude. These findings were then used to construct the questionnaire for expert interviews. A basic descriptive statistical analysis on the opinion of 20 experts, indicated that the lack of open communication, a win-lose attitude, and mistrust, were the most expected challenges (see Section 4.3.3). These are central to the partnering philosophy and it confirms the current issues within the partnering projects. Hence, to achieve the benefits of partnering, it is imperative to understand and address the root causes of these challenges.

7.3.2 Objective 2: Identify the root causes of cultural and behavioural challenges

To address cultural and behavioural challenges it is essential to question and tackle deep rooted beliefs and assumptions. In this research, root causes of cultural and behavioural challenges were identified using the interview questionnaire constructed from the findings of the systematic review of the literature. These root causes were categorised and further analysed on the basis of cultural web elements: rituals and routines, stories, symbols, power, organisational structure, control systems, and paradigm (see Section 4.3).

Rituals and routine related root causes relate to daily routine activities and reinforcement rituals that make up ‘the way things are done in construction partnering projects’. Stories related root causes present conversations between industry professionals that reduce the effectiveness of principles related to partnering. Symbols related root causes are associated with symbolic representations. Power related root causes consider authority related causes that hinder the transformation of the behaviours and increase resistance towards an integrated team approach. Organisational structure related root causes are related to partnering project structure and the structural relationship between parties to the partnering contract. Control related root causes consider measurements, recognition and reward systems that impede a partnering philosophy from being implemented within partnering projects. Paradigm related root causes portray the current taken-for-granted assumptions of the construction industry that hamper effective implementation of a partnering philosophy. Research findings on the root causes of cultural and behavioural challenges are summarised in Section 6.2.

Most of the root causes expressed by academic and industry experts were similar in nature. Research findings show that paradigm and power related root causes are the most commonly perceived issues to be tackled in partnering projects. Mistrust, traditional industry practices, various individual strategies, poor understanding of partnering and resistance to change were expressed frequently as the root causes of challenges in construction partnering projects (see Section 4.3). To bring about cultural change in partnering projects it is essential to address these root causes. Leadership, as the source of the beliefs and values, has the most important task to address these challenges and their root causes.

7.3.3 Objective 3: Establish 'leadership practice areas' to address cultural and behavioural challenges and its root causes

The findings of this study show a significant number of cultural and behavioural challenges to be overcome if the construction industry is to fully embrace a partnering philosophy. Any change in culture needs consideration and focus on basic assumptions and beliefs that are shared by members of partnering arrangements. Several researchers believe leadership is the source of the beliefs and values (see Section 2.3.3). The leadership's ability to think culturally and to conceptualise via a working model is imperative in the management of cultural change. For successful cultural change, a range of behaviours would be required from project leaders due to the fragmented nature of individual construction teams. Therefore, a focus on a range of leadership practices would yield a better understanding of ways and means of addressing cultural and behavioural challenges in construction partnering projects (see Section 2.4.3). In this research, leadership elucidations for cultural challenges and root causes in partnering projects are studied from a process perspective.

Data analysis of expert interviews (see Section 5.2) and case studies (see Section 5.3) resulted in the development and the refinement of leadership practice areas. The final list of 'leadership practice areas' are presented in Figure 6-4 (see Section 6.3 for further details). Research findings show 44 'leadership practice areas' categorised under 7 categories: 'initial embedding strategies', 'planning and political strategies', 'routines and controls', 'human resource management', 'structure, systems and procedures', 'rituals and routines' and 'stories and symbolic articulations'.

Initial embedding mechanisms include early stage practices that focus on what leaders pay attention to and how they set up a partnering arrangement. Planning and political strategies focus on project planning, project structure and power related aspects of leadership practices that encourage mutual trust and understanding. Routines and controls consist of day to day practices, controls and allocation of resources, rewards and status. They focus on leadership practices that embed collaborative culture as the way of doing things within partnering projects. Human resource management focuses on people management aspects of leadership including role modelling, leadership qualities that encourage cultural change, motivational measures and training. Structure, systems and procedures consist of project organisational structures and adopted systems and procedures that employees use for routine activities and reporting. Rites and rituals include customary habits and ritualistic behaviours that focus on consolidating collaborative culture within the partnering arrangements. Stories and symbolic articulations include conversations about certain individuals, arrangement of the physical work environment and other symbolic articulations embedded within the processes.

7.3.4 Objective 4: Evaluate 'leadership practices' to address cultural and behavioural challenges and its root causes

The process centred leadership definition suggests it is a process of influencing people to willingly strive towards the achievement of organisational/project goals. Consequently, the emphasis is taken away from individual leaders who are in charge of followers and they are seen as members of a community of practice/partnering arrangements. Researchers perceive leadership and culture are learnt, not biologically inherited (see Sections 2.3.1 and 2.4.1). As a result, understanding leadership practices becomes essential in this perception.

In this research, leadership practices and associated areas were initially established during the analysis of expert interviews (see Section 5.2.3). The analysis of expert interviews showed that several structural and political strategies were used at the very beginning of the project (see Section 5.2.2.1.1). However, structural and political strategies, such as the team approach and balance of power, continued to be used throughout the project in addressing cultural and behavioural challenges. Furthermore, limited evidence regarding

reinforcement mechanisms within construction partnering projects were found from expert interviews.

Table 7-1: Evaluation of leadership practices

<i>Leadership practice category</i>	<i>Initial leadership practices established from expert interviews</i>	<i>Leadership practices established from case studies</i>	<i>Evaluation of leadership practices</i>
<i>Initial embedding mechanisms</i>		See sections 5.3.1.2 and 5.3.2.2	See section 5.3.3.1
<i>Planning and political strategies</i>	See section 5.2.2.1.1	See sections 5.3.1.3.1 and 5.3.2.3.1	See section 5.3.3.2.1
<i>Routines and controls</i>	See section 5.2.2.1.2	See sections 5.3.1.3.2 and 5.3.2.3.2	See section 5.3.3.2.2
<i>Human resource management</i>	See section 5.2.2.1.3	See sections 5.3.1.3.3 and 5.3.2.3.3	See section 5.3.3.2.3
<i>Structure, systems and procedures</i>	See section 5.2.2.2.1	See sections 5.3.1.4.1 and 5.3.2.4.1	See section 5.3.3.3.1
<i>Rites and rituals</i>	See section 5.2.2.2.2	See sections 5.3.1.4.2 and 5.3.2.4.2	See section 5.3.3.3.2
<i>Stories & symbolic articulations</i>	See section 5.2.2.2.3	See sections 5.3.1.4.3 and 5.3.2.4.3	See section 5.3.3.3.3

Leadership practices were then refined through a multiple case study approach, where empirical evidence regarding contemporary leadership practices that address cultural and behavioural challenges were collected and analysed. Leadership practices developed via case study approach were then evaluated against initial leadership practices established from expert interviews. Table 7-1 summarises the steps taken to evaluate and refine the identified leadership practices. It emerged that there was a distinct group of codes only focused on early stage cultural embedding mechanisms. These codes were separated from the ‘structural and political strategies’ category and introduced into the initial embedding strategies. The findings of this study indicate that a full range of leadership behaviour/practices will be required to tackle cultural and behavioural challenges and root causes in construction partnering projects. Section 6.4 provides a final list of leadership practices.

7.3.5 Objective 5: Develop a framework of leadership practices to address the root causes of cultural and behavioural challenges

In this research, the process perspective of leadership is conceived as an integrated framework of behaviours and practices that encourages a partnering philosophy and addresses cultural and behavioural challenges, and its root causes. Consequently, a theoretical leadership framework was initially developed containing primary embedding mechanisms and secondary reinforcement mechanisms that can be used by leaders to embed and change beliefs, values and assumptions (see Section 2.5). This theoretical framework was then gradually refined through the expert opinion survey method and case study method. Upon further examination of leadership practices, the new category, initial embedding strategies, was generated (see Section 5.2.2.1.1 and 5.3).

These findings of the study indicate that a threefold leadership framework (see Figure 6-4) comprising ‘initial embedding mechanisms’, ‘continuous embedding mechanisms’ and ‘reinforcement mechanisms’ is essential to tackle cultural and behavioural challenges and their root causes in construction partnering projects. Initial embedding mechanisms consist of early stage practices and pre-start deliberations, which leaders should pay attention to when setting up a partnering arrangement. These practices prepare the participants of the partnering arrangement towards collaborative ways of working, mutual trust and understanding. However, to maintain the momentum of this change, it is vital to use continuous embedding mechanisms. The findings also indicate that leaders should continuously embed collaborative culture through ‘planning and political strategies’, ‘routines and controls’ and ‘management of human resources’. Furthermore, to perpetuate collaborative ways of working, mutual trust and understanding, leaders must use various reinforcement mechanisms. These mechanisms can be incorporated through ‘structure, systems and procedures’, ‘rites and rituals’ and ‘stories and symbolic articulations’. The case study findings indicate that leaders considered and used these mechanisms effectively during the project to promote an integrated working culture and to reinforce the partnering philosophy.

7.4 Contribution to theory

A lack of empirical evidence in the leadership literature in construction and a dearth of construction partnering related leadership studies (see Section 2.4.2) highlighted the need for leadership research in construction partnering projects. This study contributes to theory by establishing leadership practices that address cultural and behavioural challenges and its root causes in construction partnering projects. In doing so, this study merged the literature from leadership, construction partnering, culture and cultural change domains, to provide a better understanding of cultural transformation in construction projects. The use of the cultural web was extended to understand cultural and behavioural issues within project environments. Furthermore, findings from this research augment the use of primary embedding and secondary reinforcing mechanisms for cultural change by introducing the refined leadership framework within partnering projects. This research established initial embedding, continuous embedding and reinforcement mechanisms as part of a threefold leadership framework that addresses cultural and behavioural challenges and their root causes in construction partnering projects.

7.5 Contribution to practice

Collaborative working, mutual trust and understanding are the core principles of partnering. However, there are limited studies empirically investigating the partnering related behavioural and relational aspects. From the practical point of view, this research identifies cultural and behavioural challenges and its root causes in construction partnering projects. This enables parties to a partnering arrangement to remove barriers and investigate ways and means of tackling those challenges.

The main findings of this research are the better understanding of routine leadership practices and the integrated framework of leadership practices that address cultural and behavioural challenges and its root causes. This contribution to the existing body of knowledge in construction related leadership will also provide the understanding of the ways and means of reducing an adversarial culture in the UK construction industry. These findings will be useful to partnering project leaders and team members in embedding a collaborative project culture. Identified leadership practices show an array of expected leadership behaviours from project leaders. This will assist the project coordinators/senior

managers in selecting and training appropriate team members for partnering projects. Overall, the research findings will help to build future leaders of the UK construction industry.

7.6 Limitations of the study

This research adopted social constructionism as its research philosophy and, by its nature, the research is intended to understand the interactions between participants in detail. This study adopted various techniques to ensure the reliability and the validity of the findings. It ensured the depth of the study by using multiple sources of evidence. However, attempting to generalise the findings to a wider population is difficult as the findings are context sensitive to both the participants in the series of expert interviews and the two large scale partnering case studies within the UK. However, this study has laid an important foundation for future research on addressing cultural and behavioural challenges in construction partnering projects.

Another limitation of the study is with regard to the testing of the developed leadership framework. At this stage, it is extremely difficult to apply the framework due to time constraints.

7.7 Further research

7.7.1 Enhance the proposed leadership framework through participatory action research

Even though the established framework has gone through two cycles of refinement (see Section 3.4.1), the reliability and generalisability of the framework can be further extended by testing and enhancing it through participatory action research. Participatory action research is seen as an appropriate method to involve practitioners in the research process. This would provide better access to study leadership in action.

7.7.2 Evaluate the proposed leadership framework using longitudinal case studies

Strategic partnering or framework agreements are now common in the public sector. A longitudinal study on leadership practices that addresses cultural and behavioural challenges would provide empirical information on how cultural embedding and reinforcement mechanisms performed and evolved throughout a partnering project.

7.7.3 Identify leadership practices that embed collaborative culture during the preparation stage of construction partnering projects

Research findings revealed the importance of initial embedding strategies in setting up a collaborative culture from the beginning. Therefore, a study on culture embedding leadership practices in the preparation stage would provide further information related to initial embedding strategies.

7.8 Final note

This chapter summarised the main conclusions of the research obtained from the literature, expert interviews and case studies. The initial research problem was formulated based on the comments from researchers regarding cultural and behavioural challenges in construction partnering projects. The interdependency and interconnection between culture and leadership steered the research towards finding leadership solutions for the cultural and behavioural challenges. The literature review established the underlying concepts and theories to form a better philosophical understanding of the logic, interdependency and metaphysical aspects of this interconnected phenomena. Even though various researchers asserted the central role of ‘change in attitudinal and behavioural characteristics’ in construction partnering there was a lack of literature on how it can actually take place. Therefore, the empirical investigation of this study attempted to identify and develop a framework of appropriate leadership practices that address the cultural and behavioural challenges associated with partnering projects in construction. Accordingly, this research contributed to both theory and practice as explained in Section 7.4 and Section 7.5 respectively.

APPENDIX A LIST OF PUBLICATIONS BY THE AUTHOR

Edited books

- Williams, A. & Thurairajah, N. (Eds) 2009. Work Based learning: working the curriculum. University of Salford. Salford

Journal articles

- Underwood, J. Williams, A. Thurairajah, N. 2009. Improving performance through HEI-Industry engagements in the built environment. Industry and Higher Education. (23)1. 39-49

Reports

- Thurairajah, N. Lees, M. Williams, A. 2009. ACBEE Phase IV – Intellectual capital perspective in employer engagements. University of Salford. Salford
- Haigh, R. Amaratunga, D. Baldry, D. Pathirage, C. Thurairajah, N. 2009. Increasing the effectiveness of disaster management strategies by sharing knowledge and good practice. RICS. London

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- Thurairajah, N., Haigh, R. and Amaratunga, R.D.G. 2005. Achieving excellence in construction. In: 5th International Postgraduate Research Conference. 14-15 April. Salford. Salford: University of Salford.
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- Thurairajah, N., Haigh, R. and Amaratunga, R.D.G. 2006c. Cultural change in construction partnering projects: the role of leadership. In: Joint International CIB symposium, construction in the XXI century: local and global challenges, 18-20 October. Rome. Italy: Edizioni Scientifiche Italiane.

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- Thurairajah, N., Haigh, R. and Amaratunga, R.D.G. 2008. An Empirical study of the cultural and behavioural challenges in the UK construction partnering, In: Building Resilience BEAR 2008. 11th – 15th February 2008, Kandalame, Sri Lanka. Salford: The University of Salford
- Thurairajah, N., Lees, M. 2008. Simplistic model for employee selection and evaluation in the UK construction industry, In: Building Resilience BEAR 2008. 11th – 15th February 2008, Kandalame, Sri Lanka. Salford: The University of Salford
- Thurairajah, N. and Lees, M. 2010. Measuring Human Intellectual Capital Transfer in HEI-Industry Engagements In: CIB world congress. May 2010 Salford. Salford: The University of Salford
- Thurairajah, N., Palliyaguru, R & Williams, A 2011, Incorporate disaster management perspective into built environment undergraduate curriculum, In: International conference on Building Resilience 2011. 19th - 21st July 2011. Sri Lanka: University of Salford.
- Thurairajah, N., McAdam, B. Williams, A. 2012. Using synchronous web conferencing to enhance situated distance learner experience in built environment

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- Thurairajah, N., Goucher, D. 2012. Usability and impact of BIM on estimation practices: cost consultant's perspective. In: CIB international conference on Management of Construction: Research to Practice. 26 – 29 June 2012, Montreal, Canada: Universite de Quebec.

APPENDIX B SEARCH STRINGS

1. EBSCO

AB construction and AB ("partnering" OR partnership OR “supply chain” OR “relational contract” OR “relational contracts” OR “collaborative contract” OR “collaborative contracts” OR “framework contract” OR “framework contracts” OR PFI OR PPP OR “capital contract” OR “capital contracts” OR alliance OR "prime contract" OR "prime contracts") and AB (problem OR issue OR barrier OR challenge OR concern OR "critical success factors" OR failure) **found 631 results.**

2. Engineering Village

(((((construction) WN AB) AND (({partnering} OR partnership OR {supply chain} OR {relational contract} OR {relational contracts} OR {collaborative contract} OR {collaborative contracts} OR {framework contract} OR {framework contracts} OR PFI OR PPP OR {capital contract} OR {capital contracts} OR alliance OR {prime contract} OR {prime contracts})) WN AB)) AND ((problem or issue or barrier or challenge or concern or {critical success factors} or failure) WN AB)), English only , 1990-2009 **found 558 results.**

3. Emerald

The search: All fields(excluding fulltext) / construction AND YEAR / 1990 : 2009 and (partnering OR partnership OR “supply chain” OR “relational contract” OR “collaborative contract” OR “framework contract” OR PFI OR PPP OR “capital contract” OR alliance OR "prime contract") AND (problem OR issue OR barrier OR challenge OR concern OR "critical success factors" OR failure) / All fields(excluding fulltext) **found 102 results.**

4. Gale (Completed in pieces)

AB Construction and AB ("partnering" OR partnership OR “supply chain” OR “relational contract” OR “relational contracts” OR “collaborative contract” OR “collaborative contracts” OR “framework contract” OR “framework contracts” OR PFI OR PPP OR “capital contract” OR “capital contracts” OR alliance OR "prime contract" OR "prime contracts") and AB (problem or issue or barrier or challenge or concern) **found 51 results.**

5. IngentaConnect (Completed in pieces)

Found 63 articles with title/keywords/abstract containing Construction AND ("partnering" OR partnership OR "supply chain" OR "relational contract" OR "relational contracts" OR "collaborative contract" OR "collaborative contracts" OR "framework contract" OR "framework contracts" OR PFI OR PPP OR "capital contract" OR "capital contracts" OR alliance OR "prime contract" OR "prime contracts") AND (problem OR issue OR barrier OR challenge OR concern)

6. CSA

Found 0 results for Search Query #1 AB=construction and AB=(((("partnering" OR partnership OR "supply chain" OR "relational contract" OR "relational contracts") or ("collaborative contract" OR "collaborative contracts" OR "framework contract" OR "framework contracts" OR PFI) or (PPP OR "capital contract" OR "capital contracts" OR alliance OR "prime contract" OR "prime contracts"))) and AB=((problem OR issue OR barrier) or challenge or concern)

7. Science Direct

(pub-date > 1989 and TITLE-ABSTR-KEY(construction)) and (TITLE-ABSTR-KEY({partnering} OR partnership OR {supply chain} OR {relational contract} OR {relational contracts} OR {collaborative contract} OR {collaborative contracts} OR {framework contract} OR {framework contracts} OR PFI OR PPP OR {capital contract} OR alliance OR {prime contract} OR {prime contracts})) AND (TITLE-ABSTR-KEY(problem OR issue OR barrier OR challenge OR concern)) **found 77 results.**

8. SwetsWise (Completed in pieces)

Found 199 results for Construction AND ("partnering" OR partnership OR "supply chain" OR "relational contract" OR "relational contracts" OR "collaborative contract" OR "collaborative contracts" OR "framework contract" OR "framework contracts" OR PFI OR PPP OR "capital contract" OR "capital contracts" OR alliance OR "prime contract" OR "prime contracts") AND (problem OR issue OR barrier OR challenge OR concern) (within article abstract) year: 1990 - 2009 , showing: all subscriptions, language: english categories: all, all, database: SwetsWise .

APPENDIX C SYSTEMATIC REVIEW: LIST OF FULL PAPERS CONSIDERED FOR IN-DEPTH REVIEW

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APPENDIX D EXPERT INTERVIEW GUIDELINE

Research title: Leadership practices to address cultural and behavioural challenges in construction partnering projects

Aim and objective of the study

This interview is conducted based on an on-going PhD research that aims to identify appropriate leadership practices to address the cultural and behavioural challenges associated with construction partnering projects.

Its main objectives are:

- To identify the root causes of cultural and behavioural challenges
- To explore leadership practices used to address these root causes.

Potential benefits to your firm

- Opportunity to express the current issues and challenges in partnering projects
- Opportunity to discuss the current leadership practices used to address cultural root causes in the project and their effectiveness
- Impartial views on various leadership practices and their appropriateness in addressing cultural root causes.

Commitment anticipated from your firm

- Individual interviewees will be requested to check validity of interview transcripts produced by the researcher.

Consideration on confidentiality

- All interview materials will be kept strictly confidential and will only be available to the members of the supervisory staff in the University.
- Only aggregated results of this study will be used in any publications.

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Research title: Leadership practices to address cultural and behavioural challenges in construction partnering projects

Preamble

The aim of this study is to identify the cultural and behavioural challenges in construction partnering projects. In this process the emphasis will be placed on the behaviour of the *parties to the partnering arrangement*, which lead towards poor performance. The study will further focus on finding the reasons behind these behaviours and to understand the role of leadership to address/improve cultural and behavioural challenges in construction partnering projects.

Definitions of the following terms are used in this study.

Partnering arrangement: Legal contract to which partnering terms are attached and is made between the client and the contractor and each of the other parties who have executed the project partnering agreement.

Parties to the partnering arrangement: Comprise the members of the partnering team, subject to changes in accordance with these partnering terms and together with each of those further parties who execute a joining agreement.

Instructions

Thank you for agreeing to take part in this research. Your answers will be held in strict confidence and will not be reported within your organisation.

The questions are both “closed” and “open” formats to ensure effective coverage of the issues concerned.

Interview Questions

Section A – Personal information

A-1) Brief description of the interviewee

Firm:

Position and job title:

Construction partnering related experience:

Contact information:

Section B – Cultural and behavioural challenges and its root causes in construction partnering projects

B-1) To what extent do you see, “**not achieving continuous open and honest communication among parties to the partnering arrangement**” as a problem in construction partnering projects?

Very high High Average Low Very low Undesignated

What are the probable causes for this problem?

How can project leadership respond to this problem?

B-2) To what extent do you see, “**not deriving at a win-win attitude among parties to the partnering arrangement**” as a problem in construction partnering projects?

Very high High Average Low Very low Undesignated

What are the probable causes for this problem?

How can project leadership respond to this problem?

B-3) To what extent do you see, “**not having full commitment of parties to the partnering arrangement**” as a problem in construction partnering projects?

Very high High Average Low Very low Undesignated

What are the probable causes for this problem?

How can project leadership respond to this problem?

B-4) To what extent do you see, “**improper sharing of risk and rewards among parties to the partnering arrangement**” as a problem in construction partnering projects?

Very high High Average Low Very low Undesignated

What are the probable causes for this problem?

How can project leadership respond to this problem?

B-5) To what extent do you see, “**reluctance of parties to the partnering contract to change to an integrating culture**” as a problem in construction partnering projects?

Very high High Average Low Very low Undesignated

What are the probable causes for this problem?

How can project leadership respond to this problem?

B-6) To what extent do you see, “**failure to build a true relationship of trust between parties to the partnering arrangement**” as a problem in construction partnering projects?

Very high High Average Low Very low Undesignated

What are the probable causes for this problem?

How can project leadership respond to this problem?

B-7) To what extent do you see, “**failure to understand the partnering concept among parties to the partnering arrangement**” as a problem in construction partnering projects?

Very high High Average Low Very low Undesignated

What are the probable causes for this problem?

How can project leadership respond to this problem?

B-8) To what extent do you see, “**inefficient ways of problem solving and continuous improvement**” as problems in construction partnering projects?

Very high High Average Low Very low Undesignated

What are the probable causes for this problem?

How can project leadership respond to this problem?

Section C – Final comments

C-1) Please state any other behavioural/cultural challenges faced in the project. Briefly explain the probable causes behind this.

C-2) What do you see as the most critical factor(s) to the success of the partnering process?

APPENDIX E EXPERT INTERVIEW TRANSCRIPT

Section A – Personal information

A-1) Brief description of the interviewee

Firm: XXXXX XX XXXXXXXXX

Position and job title: Professor

Could you please explain your partnering related experience?

I wrote a report on problem based learning based on productivity network studies; I have supervised PhDs on partnering and produced a lot of academic papers. I have been in academia for 25 years and partnering was called good business in those days.

Section B – Behavioural challenges and cultural root causes in construction partnering projects

B-1) To what extent do you see, “not achieving continuous open and honest communication among parties to the partnering arrangement” as a problem in construction partnering projects?

Very high High Average Low Very low Undesignated

What are the probable causes of this problem?

I should also add that you should have open, honest and transparent communication because if you are open and honest and not transparent it is still not effective communication which causes problems. Hence the acronym HOT; honest, open and transparent. In some papers that’s what they are talking about. I have written papers on HOT issues.

To answer it briefly it is very difficult. There are six components to the problem. The first one is social issues between the parties; if you don’t get the right cultural environment for communication to take place then it’s not going to happen. If one party has an imbalance of power, if a party is so dominant in power you are not going to have good

communication. If you are not going to have mutual respect then you are not going to have open communication. So these are all the social aspects related to personal communications.

The next are legal issues. The parties must protect the underlying legal positions. Partnering is bolt-on on top of the base line contractual prescriptions. So, you have a contract which defines the minimum standards and the partnering takes those minimum standards and improves them beyond that. But the parties have to preserve and protect their own contractual positions. So, there are legal prescriptions about why sometimes HOT doesn't take place.

The third obvious one is economic reasons. People are here to make profit and sometimes giving away information means sacrificing profit. It is a very short term view and the economic perspective in the industry is very short term. It's always adversarial; it's always one off spot contracts. So it's this contract and this is the only contract we consider; whereas what we should be thinking about is the long term perspective of this being part of an evolving relationship that may last for 20 or 30 years. So giving something away now may give you a better risk neutral position in the long run. A lot of people don't see that. They look to achieve a short term quick fix.

The fourth one is not so important but it is environmental. There are certain instances where HOT communication can have impact beyond the partnering group. For example, on a road project. Consider you are working on environmental friendly water removal from the road and it is going into road side sumps and soak ways. So instead of going into the drains you align to evaporate through the surrounding soil. If you are doing some test in that pit and you find some heavy metals like cadmium or mercury appearing in the water which is going into that water table, exposing that to the rest of that group can have very serious repercussions for the whole project. So the environmental context of a project affects the ability to communicate openly and honestly.

Political problems, no project is running in a political vacuum and there are always mechanisms and arrangements being taken outside of the project which affect and have impact on project relationships. A change of government can have dramatic effect on the way a project behaves. The government changed in Portugal; and the government suddenly changed one of the previous government policies. It had a catastrophic effect on

a project which was 70% built. So much so, the private sector client actually went bankrupt because of the change in government policy. So politics can have a very significant effect in this example.

And finally technological issues. Unless the parties understand implicitly the technology they are trying to introduce there is a very little benefit in actually exposing that information to them. It's like a six year old child being taught by a medical doctor while the medical doctor only uses medical language. It doesn't register with that person. You have attempted to communicate but technical and technological communication mechanisms don't allow that communication to be effective and efficient.

I think previous experience creates a social awareness that affects an individual. It affects the psyche. It affects the key principles by which they conduct the rest of the business. A horrible example... when I was just starting, more than 30 years back, I was invited to a project meeting. The main contractor was an experienced party who was a soft landscape gardener. They won a project where a considerable amount was hard landscaping, paths, foot paths, walls etc. They brought in a subcontractor who was very experienced on running contracts and this subcontractor battered the main contractor with claim after claim after claim after variation. And essentially the subcontractor tried to grab the entire contract sum for themselves. It was so heated that the client was asked to come as a mediator between subcontractor and the main contractor. The subcontractor presented all the references to contractual obligations and everything else. The main contractor didn't have a clue about it and didn't understand the implications at all. And the subcontractor said 'we are not going to withdraw any claims and we are entitled to make these claims under this contract and he must pay us'. At which point the main contractor in his own office, picked up his chair, threw it at the subcontractor and it missed and went through the window of the office and landed on the roof of his own car in the car park below.

That level of breakdown of communication just doesn't happen overnight. Partnering was brought in to alleviate some of this adversarial nature. The bottom line is that partnering is extra over contractual obligations and people forget that. Contractual obligations are the things that drive contracts and partnering is a concept that takes that. People get upset because they think that they have been exploited while what the other person has done is to go back to the contracts. However, if a contract is brought out and the contractual

clauses have been specified then partnering is broken down. Partnering works when the contract stays in the drawer and never gets looked at and people just operate; the moment people start referring to contractual clauses partnering is broken down and you are back to the old adversarial relationships. That's not surprising because most of the people in the position of power and decision making have been brought up in an adversarial nature and if I am honest, I haven't seen anyone over the age of 40 who is actually capable of partnering. Because their mindset is in their old regime, breaking out of it is just impossible. You can't teach an old dog, new tricks.

The example I can give you is where we ran a 'role play simulation' in which information was given to one party that would have saved them some money if they disclosed it. But it would have saved the other party more money. They chose to sacrifice their pot of money to stop the other party getting more money because they saw the balance and because the other party wasn't behaving in the spirit at that time. It was an opportunistic behaviour.

So partnering will build up as the people who have never experienced partnering move through the positions of power and become leaders and prime movers in the organisation. It's all well and good when an organisation say that they are going to be a partnering organisation and the Chief Executive and the Board of Directors say they are a partnering organisation. But, if the Indians down on the shop floor don't believe it and don't adopt it you have failed. The project leader or the senior people can respond to breakdowns in partnering by actually building it into the culture of the organisation so it becomes part of the fabric and nature of the organisation and the people are prepared to make compromise and to make decisions that seems uneconomic in the short term providing that there is a long term benefit. If the things go wrong they are not criticised for making that decision at some point in the future when people looking back on things with 2020 vision. Because that is a perfect vision and these decisions made now are promulgated for the future.

Can you elaborate further on the last point?

I mean, it's all part of Norton's game theory. Win-win is actually the opposite of a prisoner's dilemma. We don't do enough game theory teaching or education in the industry. So, how people are expected to understand the concept of win-win, when all they ever had been taught is win-lose. I mean, the mathematics of game theory is complicated. The mathematics of win-win game theory is even more complicated and

most of the time when they talk about win-win game theory they are making assumptions that it is a zero sum game which is really a big qualification in game theory. Zero sum game is when one person wins while other person loses. That's not so in the construction industry. You have two contractors bidding for a project and one wins the project. The profit they may make from the project may be dramatically different from what somebody else might make from the same project if they were given the opportunity because of the context of the organisation. So, zero sum is an assumption which is invalid in the industry and as a two person game is an inappropriate assumption for the industry. But without making both of those assumptions win-win game theory mathematics is so complicated that probably more than 95% of the people in UK wouldn't have a hope in understanding the mathematics associated with it. So, if they don't understand the mathematics they can't understand the base on which they make the decision; how can they make a proper decision? So there is lot more that we could have done in terms of educating the win-win attitudes.

How can the project leadership respond to this problem?

I think a lot of the ground work must be set up before the project commences. So time spent in establishing a partnering regime, defining how the partnering charter will work, how the partnering will work in practice, how the dispute mechanism will be implemented and how disputes will be escalated up the decision making chain, all of that will benefit from more pre-start deliberations. Very effective partnering workshops and what we called partnering showers where the concepts are described to everybody associated with the project before they start on the project. So, it's part of their induction they get a briefing which says that this project is a partnering project, partnering means bla bla bla. This means to you that; if you see a solution to a problem, do it; tell us what you have done so that we can record it. Get on with it, don't stop the job. One of the other options to partnering is what we call the psychological stop button where anybody on site has the power to press a button and stop work on site because they can see a problem that being incorporated and made worse by carrying on. A bit like the stop button in a production line. In Japan, somebody who presses a button in the production line gets applauded by the rest of the team, because they have stopped a fault being incorporated into a finished product. If we do that in the UK, everybody will think, there goes our bonus and what is

this that someone so doing. So a real change in the mindset is needed to get partnering to a level where it could be effective.

It is also the culture of not being prepared to accept the defect being incorporated into a project and getting it stopped early rather than saying we will build it in and sort out later. We should have projects that are right from the first time, every time. We really don't have that culture. The cultural characteristic of the Anglo-Saxon is 'get it done; don't think about it, don't think about achieving the ultimate solution; get something done is good enough. That's a big problem because it is satisfying solution not an optimising solution. The difference between the satisfying and optimising can be pretty big. So we are missing out on that. Allen Griffith quoted that 'making good defects and snagging costs the construction industry something like six billion pounds per annum'. That is six billion pounds of waste. I believe at a time that was more than the entire profitability of the construction industry. So, if you eliminate that waste you can double the profit of the construction industry. I'm dumb struck at why people don't do it; but they don't.

B-2) To what extent do you see, “not deriving at a win-win attitude among parties to the partnering arrangement” as a problem in construction partnering projects?

Very high High Average Low Very low Undesignated

It is very high for the client and high, not as high for private sector partners. And part of that are structural problems with the public sector. Because the public sector is still subjected to external audit and demonstrating a decision made under the spirit of partnering and justifying that to an external auditor is quite difficult. So there is much more reluctance in the public sector to go for compromised win-win situations. As they are scrutinised by external audit, it is difficult to prove its validity. The private sectors are a little bit more relaxed because they only have to report to their managers and their Board of Directors. But it is quite high because they are still looking to ramp up the profitability and giving away in the short term may be seen as ceding profitability rather than long term improved profitability. So the timescales are wrong. The attitude of the people and some of the regulations that they are bound by are wrong, particularly for public sector.

Quite often, it's the client who goes for win-lose attitude. Sometimes it's the contractor. I haven't seen any sub-contractors and suppliers because I haven't seen any evidence of genuine partnering downstream of the contract. I really think that the contractor partners with the client because he sees that as a way of improving the profitability. But them having traditional arrangements with their sub-contractors and suppliers is because it is a way of screwing down those subs. The evidence has been seen in Japan as well. Lot of Huratsu, these clusters of organisations are happy to partner with the big guys but when they go to the sub-contractors they say that you got an order for 20,000 products this time and the next time the price has to go down by 10% for the same quantity. So you have to improve your productivity by 10% and the next time we come back to you we need another 10% reduction. Suppliers and Sub-contractors are on their own and aren't capable of continually making that sort of continuous improvement on their own. They need support. You see huge numbers of sub-contractors to Japanese organisations actually losing the contract and sometimes going out of the business. It is said that life expectancy of a main contractor and a sub-contractor in Japan is less than 36 months in Japan. Partnering is about sustainable long term strategic partnering which is more than 36 months. But even in Japan the typical life expectancy downstream is less than 36 months. The clients and main contractors, the big guys, go for 20 to 30 years, but this hasn't flowed downstream and I suspect that it hasn't flowed upstream from the client towards their financiers and their approvers. So we have a bit of partnering in the middle and the tension both ways from more adversarial relationships both upstream and downstream. The parties are pushed together to partner and not given the tools that allow it to happen.

What are the probable causes of this problem?

All of that SLEET still applies; I think there are financial and accounting problems. But the biggest one is lack of understanding of what partnering is about. They just don't understand what it means, they adopted it because the client wants partners; if the client says we are only going to contract with partners the main contractor is going to turn out and say that we will be a partner and partner with you, not because they believe philosophically in the concept but because it is the only way for them to get the business. It is part of the business environment, you do what the client wants and you offer what the client wants. So, there is a real philosophical difficulty plus a cultural difficulty plus the difficulty in not having the proper tools and tool kits to partner properly. How many

contractors will set aside time to induct their entire work force. Those tools aren't there because the industry is still being operated in a traditional manner but with the umbrella on top which says partnering. However, there are some genuine attempts to partnering but predominantly it is a buzzword being adopted to obtain business. It is like lean construction; it is a buzzword adopted like competitive advantage. They are all buzzwords created to become the current currency of business development. Process reengineering had some particular merit until they were sort of sabotaged as buzzwords. And there are bits of partnering that could be very good if done in the right way, if done in the wrong way it can be catastrophic.

How can project leadership respond to this problem?

It goes down to the setting up at the very beginning. I don't think you can establish the win-win attitude once you got the contract in place, because the contract defines the obligations. All you need to do is to define the partnering win-win culture before you place the contract so that win-win culture becomes a part of contractual obligations.

Theoretically it is a nice idea to have a flexible contract, practically it is open to abuse because there should be some form of contingency to vary the terms of contract usually some money to smooth over a problem. Clients pick up a form of procurement because it gives them better control. I classify four components: time, cost, quality and certainty and what they are looking for is the control over the certainty of time, cost and quality. That to my mind can only be defined in a contract. So to have a contract that defines and controls them to the level of the satisfaction of the client means that the risks are already being allocated. I am quite happy for the risk register to be negotiated pre-contract. So, that both parties sit down and construct the risks register and say these are the risks we can find and what we are going to do with them. Are we going to accept them or are we going to share them? Once all that is agreed then you have a reasonable financial model on which they base the price for the project, but to do the price and then to construct the model after giving the price is the wrong way around and is a mechanism for disaster. If you look at PPP and PFI they have got it right. Lots of pre-design and pre-start deliberations such as constructing the financial model, constructing the risk register, allocating the risk to the parties, before the price is sorted out. The KPAX and LOPAX and the unit charges are all sorted out in the right order. Probably there is more flexibility

in a PPP project for partnering than any original NEC or JCT based contracts, because the risks are defined by the contract and there is no room for negotiation.

B-3) To what extent do you see, “not having full commitment of parties to the partnering arrangement” as a problem in construction partnering projects?

Very high High Average Low Very low Undesignated

What are the probable causes of this problem?

The reason for that is the same argument I used before. Some parties say that they are partnering simply to get business. Once they got the business they still want to adopt the old adversarial relationship and some of the people are in the positions to affect the deliberations on a particular project. So, you have a client who is being told that you will partner on this project and he doesn't believe in partnering but he has to partner to get the project. But, he doesn't philosophically believe in partnering. So, he doesn't deliver partnering in the same degree and screws up the project. There is quite often a degree of misrepresentation of the ethos and ethics of partnering by one or another parties because they have no other alternatives.

In one of the studies it is found that the decision making wasn't devolved down to the right people. So the people who are to remote have to make decisions. Because they are remote they weren't making the right decisions all the time. Under the acronym SLEET, finance will fit under economics with all the other subcategories.

I think parties engage in partnering with an anticipation that they are going to trust the other party with some reservations. But they are going to check to make sure that they are not being ripped off and that sort of mutual caution can go wrong both ways. This can be built over time and the partners can become more trusting of each other and more cooperative. Or an instance happens that destroys the trust and there is no trust and no genuine partnering from that point on. It is very difficult to build up trust and it is very easy to destroy it. The time scales for building up trust are much longer than for destroying it. Only one sort of opportunistic attack is enough to destroy it. But parties should be aware of that and make sure that they never create that sort of incident where one party has the opportunity to be really nasty for a lot of money. It's about people not

about agreements. It's about how individual people behave and how they behave towards each other and that's very difficult and idiosyncratic. There are people you can work with and people you can't. In construction partnering, quite often you have no choice over the people you have to work with. So one of the mechanisms that you could use is to meet the team before you contract with them. If you say no, you don't contract with them. I have seen lot of examples where companies have pitched for work to send an A-team and then a team of reserves is sent on the site and they are not on the same calibre. If I am the client I would really feel misled. It's an issue.

How can project leadership respond to this problem?

It is about people, relationships, honesty and trust.

B-4) To what extent do you see, "improper sharing of risk and rewards among parties to the partnering arrangement" as a problem in construction partnering projects?

Very high High Average Low Very low Undesignated

What are the probable causes of this problem?

From research it is found that both parties felt that they are under-rewarded for the risks they are taking which is a real eye-opener. I can fully understand contractor's feeling like that but I was quite surprised that the client felt like that as well.

I think quite often risk and rewards are conflated as the two sides of the same coin. What you should actually have is a risk register and a risk management procedure and the party's agreement on how to manage the risks. And that is one action. Then another one, rewards, are potential cost savings and what they see is process improvement or reengineering or value engineering that can bring savings. They see rewards that to be shared between parties. But actually that is not same as the risks. They are conflated and seen as the same thing. You made £50,000 extra from the value engineering; now you are complaining that you are accepting other risks that you once expend for that. There is a mistake in conflating the two processes and they should be kept separate; risk and risk apportionment and risk management should be kept separate from value engineering and value management and risk and risk sharing; you can say 50-50. You can decide completely different on rewards and value engineering. Why should the client get 50% of

the savings of reengineering? He does nothing and still gets what he wants; if the contactor kept quite he could actually save it all, so the contactor could be giving away money.

The full selection criteria are value for money, risk transfer, resilience and affordability and they form the matrix for evaluating the process. They don't have to be 25% each for the four of them. The client could decide the most important thing for him such as value for money. There is a big push from the central government to provide value for money. What he should be thinking about is affordability; can I afford to pay for this project? Can I keep my costs under control? And if he has to give away some more rewards based on achieving better affordability he should do that. But we don't have any mechanisms for plotting the differences in prices based on differences in the weightings of the full criteria. I have done it once in a project and was astonished by the variability. It actually makes a significant difference and then you can play around with those criteria and say that is the optimistic cost, that is the average cost and that is the pessimistic cost. Based on this, what is the sensitivity of those when you vary one feature and you can plot the differences and who is affected most. Varying one item doesn't necessarily affect all the parties to the same degree. 10% in the risk transfer to the contractor doesn't necessarily mean that there is a 10% to the client. It could be more or less. In one of the papers I did, we found that only 83% of the risks have been accounted for. In that 83% risks that accounted for 17% were double accounted by both client and the contractor. So it came up to 100% but actual 17% of the true risk was missing. And it was made-up by two parties by accounting for the same risk twice.

How can project leadership respond to this problem?

Separating the risk and rewards and getting these mechanisms nailed pre-contract, so the parties know how it is going to be done and how it is going to be shared and why it is going to be shared. And then not to have any bad blood later, because when the client finds that he has just given the contractor 50% of £4,000,000 savings. He has the value engineered down by £4,000,000 so that client has actually saved £2,000,000. But they don't see that. They see that they have given away £2M not the £2M they saved. So, a lot of those should be brought-out before you partner so the parties understand that what they are committed to and don't feel that they are abused or ripped-off because that is quite

often what they feel. They don't feel that it is a genuine agreement and may feel that their side has been particularly badly done by.

B-5) To what extent do you see, "reluctance of parties to the partnering contract to change to an integrating culture" as a problem in construction partnering projects?

Very high High Average Low Very low Undesignated

What are the probable causes of this problem?

I think the reluctance is low. But the ability to change is quite high. Probable reasons for the problem are stereo typing, mind setting, heuristics and rules of thumb, all the usual things that people bring with them. It is the old dog, new tricks.

One of the things that partnering must do is to check continuously on whether they are getting value for money by market testing. Say you have an agreement for 10 years but there should be a agreement after 5 years or 3 years or whatever that you are going to go out and market test, to make sure that you are getting value for money, because, it is too easy to get into comfortable non-confrontational relationship where both parties are just racking-up the income without looking at the benefits.

Partnering is a big part of PPP. A preconstruction tender cost can be as much as £6M. Risking that and then thinking that we really got it down in the partnering like partnering showers and partnering workshops will come to another £250,000. They are going to do as little as possible. The other alternative is that if you really want to partner with somebody then pay that upfront for creating partnering environment that we want on this project. If it doesn't work then we pay up to a maximum of amount. Can you see client's doing that? They should do because it is good value for money. But for a public sector client to put and justify that in order would be very difficult.

How can project leadership respond to this problem?

Integrating all the parties is the key role of the leader and creating a project organisation that is more significant than the affiliation of individual members back to their parent organisations. So, good examples of partnering would be where client's, contractor's and the subcontractors' business cards would say that we are partners in this project not that

we are AMAC or Laings or city council or whoever is working on that project. They form part of a project entity with real roots but getting project managers like that is very difficult.

At the end of the day, it is more down to people. You can have all the communication strategies in the world but it is down to what people believe. And people's beliefs and people's attitudes are hard to change.

B-6) To what extent do you see, "failure to build a true relationship of trust between parties to the partnering arrangement" as a problem in construction partnering projects?

Very high High Average Low Very low Undesignated

What are the probable causes of this problem?

Because of all the answers that I have given previously; they are impediments. What would be nice is to see a list of stimulants to partnering and the impediments to partnering. We know what are the impediments are but we want to know the stimulants.

How can project leadership respond to this problem?

Everything that I said previously. It is just a compound of everything: the attitudes, the philosophies, the lack of tools and the lack of experience.

B-7) To what extent do you see, "failure to understand the partnering concept among parties to the partnering arrangement" as a problem in construction partnering projects?

Very high High Average Low Very low Undesignated

What are the probable reasons behind this failure?

It is that the whole philosophy is predicated on the level of understanding that I don't think is there; lack of education, lack of information, lack of appreciation. Quite often they make decisions and don't understand the implications that decision has on the other party.

It is about breaking the mindset of the people involved which is very difficult. Changing behaviour is very difficult to achieve.

How can project leadership respond to this problem?

Everything that I said previously.

B-8) To what extent do you see, “inefficient ways of problem solving and continuous improvement” as problems in construction partnering projects?

Very high High Average Low Very low Undesignated

What are the probable causes of this problem?

Because they genuinely do try to resolve the problems. They are just not good in resolving problems. Inefficient problem solving methods, lack of negotiation skills. How many universities teach negotiation as part of their system? Promulgating lent list, negotiating stances, their ability to calculate what is their lowest acceptable offer, allocating time and recognising the acceptable lowest threshold will increase as you move through time because of time value of money. We don't teach those.

Lack of continuous improvements is comparatively less in partnering projects; but the inefficient ways remain due the facts mentioned before.

How can project leadership respond to this problem?

It's the same as earlier. A holistic view should be taken to view these practices.

Section C – Final comments

C-1) Please state any other behavioural/cultural challenges faced in the project. Brief the probable causes behind this.

Just to mention, three affective, behavioural and cognitive components.

C-2) What do you see as the most critical factor(s) to the success of the partnering process?

The most critical success factor in partnering is the accurate definition of partnering. When you look at the definitions that are about on what people include as the components of partnering, they say that every project is different. In one of the research it is found that there are core bits like in the middle of a flower which are generic and the petals around the flower which are unique to a particular type of project. They are different. So a partnering flower of a project manager in a mechanical plant would be different from a partnering flower for flats or whatever. People don't understand what type of partnering definition that they are signing up to. That's a fundamental problem.

APPENDIX F CASE STUDY INTERVIEW GUIDELINE

Research title: Leadership practices to address cultural and behavioural challenges in construction partnering projects

Aim and objective of the study

This interview is conducted based on an on-going PhD research that aims to identify appropriate leadership practices to address the cultural and behavioural challenges associated with construction partnering projects.

Its main objectives are:

- To understand the root causes of cultural and behavioural challenges
- To explore leadership practices that address the root causes of cultural and behavioural challenges
- To determine the areas of leadership practices that address the root causes of cultural and behavioural challenges

Potential benefits to your firm

- The opportunity to express the current leadership practices used to address cultural root causes within the project
- Impartial views on various leadership practices and their appropriateness in addressing cultural root causes
- Leadership practice areas that address cultural and behavioural challenges and its root causes

Commitment anticipated from your firm

- Discussion with the project team members regarding current leadership practices
- Provide access to the project documents where appropriate
- Individual interviewees will be requested to check validity of interview transcripts produced by the researcher

Consideration on confidentiality

- All interview materials will be kept strictly confidential and will only be available to the members of the supervisory staff in the University.
- Only aggregated results of this study will be used in any publications.

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Research title: Leadership practices to address cultural and behavioural challenges in construction partnering projects

Preamble

This study focuses on the role of leadership in addressing cultural and behavioural challenges and its root causes in construction partnering projects. In this process the emphasis will be placed on the behaviour of the *parties to the partnering arrangement*.

Definitions of the following terms are used in this study.

Partnering arrangement: Legal contract to which partnering terms are attached and is made between the client and the contractor and each of the other parties who have executed the project partnering agreement.

Parties to the partnering arrangement: Comprise the members of the partnering team, subject to changes in accordance with these partnering terms and together with each of those further parties who execute a joining agreement.

Instructions

Thank you for agreeing to take part in this research. Your answers will be held in strict confidence and will not be reported within your organisation.

Interview Questions

Section A – Personal information

1. Brief description of the interviewee
 - Firm:
 - Project position and job title:
 - Construction partnering related experience:
 - Contact information:

Section B – Leadership practices to address behavioural and cultural challenges

1. How would you explain the culture within your project?
2. Describe some of the key day to day practices that you perform which contributes to leadership? Do you have any set daily targets on this?

3. How do you motivate yourself? Do you play any roles in motivating others? If so, describe leadership practices you use to motivate others and guide the project.

Management of organisational routines and control systems

4. How do you manage issues related to projects such as resource constraints, especially project funding and long term objectives of your organisation?
5. Were you informed of expected commitments and project goals?
6. How do you share information with other participants? How is it encouraged? How did you balance the loss of competitiveness from sharing information?
7. Were you informed of mechanisms that can help with the process of rewarding, payments and savings? Do you seek any improvements?
8. What means do you use to solve the issues/disputes arising from the project?
9. Did you get an induction to the project and the project participants along with project goals and objectives?
10. Are there any training programs designed to help you with your work? Do you have a personal choice towards the selection of training programs?

Management of symbolic processes and stories

11. Do you feel comfortable with the current office arrangement? Is it helpful to encourage a collaborative relationship?
12. Do all the parties buy in to the open book policy? How did you contribute to that?
13. Was there any attempt to encourage pain gain sharing? Briefly explain.
14. Do you see role models or mavericks in the project? Were there any discussions about them?

Management of power and political processes

15. How often do you meet other project participants? How is your relationship with other project participants?
16. Is there any pressure from top management? How are you managing the imbalance of power? Is there any attempt to change it?
17. Is bottom-up communication encouraged in the project? How it is encouraged?
18. At what stage did you get involved in the project? Were you able to build/fit into the project team?
19. How do you think 'individual reluctance/inability to change' can be tackled? How do you encourage others and yourself to hold a positive attitude, especially during negotiations?

Section C – Final comments

1. In your opinion, what are the primary purposes or ends of leadership?
2. How do you value your concern for people against concern for production?
3. What practices do you adopt to make other participants and yourself act in a collaborative way in the project?
4. What is the most critical factor for the implementation of leadership to address cultural and behavioural changes?
5. How do you build/induce trust between parties and shift away from the traditional blame culture?
6. Have you used any other tools/programs to help to achieve project objectives?
7. How did you manage the impact and influence of the external environment to the project?
8. Describe the main strengths and weaknesses of the current leadership.
9. What are the critical leadership practices to achieve project objectives?

APPENDIX G CASE STUDY INTERVIEW TRANSCRIPT

Section A – Personal information

A-1) Brief description of the interviewee

Firm: XXXX XXXXXXXX

Project Title: Project Manager

Construction partnering related experience: I have done XXXXXXX which is the framework we are on now which is a XXXXXXX (*client*) initiative. For the previous employer, I did a form of partnering contract with Sainsbury's supermarket and I also did an early partnering type contract, management partnering for Red Hark Commercial Development, it was a few office blocks. This is the fourth contract I have done based on a partnering basis.

Section B – Leadership practices to address behavioural and cultural challenges

B-1) How would you explain the culture within your project?

XXX framework is quite a lot on board which takes a lot of time for setting up. XXXXXXX (*client's framework*) supposed to take on board all the partnering philosophies, the best of partnering really, and it is supposed to be a two way thing. We actually go down the route of giving a maximum guaranteed price for them and we develop the design at the very early stages. So, I think the framework we are at the moment works very, very well from a partnering point of view. Because it is at a national level, the people higher up in XXXXXXXXXXXXXXX (*main contractor*) and within the XXXX (*client*) have taken the overview of the projects. So these independent people on the side lines are given an overview of the project. If we do get into the position of conflict locally with the local Trust and a specific contractor then we can go to higher-ups, who will take a view at it and see where we really should be. There is XXXXXXX level, a higher level and national level. But there are also people within XXXXXXXXXXXXXXX (*main contractor*) who are at directorship level to take a global view at it. Sometimes we will look at the things

commercially. And sometimes for the best of the whole company and everybody, take a hit commercially. We will take an overview of what is fair and reasonable.

The way it is set up, there is a facility in the contract called an early warning system. So anything that we find as a concern, that can be a concern over anything, we raise in paper work. If we raise any paper work, it doesn't automatically raise the financial cost and it is not detriment to contract; everything is completely above board and we all are honest to each other. So everyone knows where we are. There are no hidden agendas. We've got fixed mark up on the job, we know financially where we stand and the client knows financially where we stand, so it is completely open book, so it really embraces all the best parts of partnering.

B-2) Describe some of the key day to day practices that you perform which contributes to leadership?

The stage that we are at now, because we've reached towards the end of the contract, I deal with different people at different sorts of levels. I have a construction manager working for me and I have some site managers working for me to make sure the sites were run first of all. Most important is the safety, make sure the site is safe and make sure we are doing a decent quality efficiently where we should be on the programme. We declare a programme and make sure we adhere to that and also to have an overview on the financial side. So, I work closely with the commercial management, quantity surveying team to make sure that from the procurement point of view, we are procured over all trades that need to be procured and we are spending money where we should be spending it and we are not throwing money away for no reason. I also have an overview on things like preliminaries, the cost of prelims. That is really the XXXXXXXXXXXX (*main contractor*) side and also there is a design side. I have a design manager but my role is to make sure the design managers are getting the design. The best design solution is the buildable solution in a reasonable time that we can procure and get it out to our supply chain. On the other level, I deal with the states project manager, XXXXXXXXXXXX. He is my day to day contact. He is the guy I ultimately hand over the building to. Within the contract, there is also another project manager who is actually employed by the XXXXXXXX (*client*) to ensure fair play and the contract to be administered properly. There is a guy called

XXXXXXXXXX and he is an independent project manager. I also deal with him but not much as I deal with XXXX. Part of the reason for dealing with the client's project manager so much is we have a lot of interfaces in the services, the things that may disrupt or affect these clinical services. So we got to develop close relationships very early on and we got to speak to the XXXXXX. If there is a problem you don't always find out straightaway; so you need to know whether people are going to accept what you are doing.

B-3) How do you motivate yourself? Do you play any roles in motivating others?

The thing that motivates me? There are few. The reason I came to XXXXXXXXXXXX (*main contractor*), the company and the reason I came to XXXXXX (*client building*) because I've got quite a big social conscious, really. I enjoy construction anyway but my motivation is doing buildings that add something to the community. XXXXXXXXXXXX (*main contractor*) know this when I came here because I liked to build things like schools, hospitals, colleges, things that add a bit of benefit to the environment. So that's one thing that motivates me. And the other thing that motivates me is the handing over. The actual handing over of the finished building and people going, "that is lovely, that's really nice". There is always pain involved with that but to me that is a big, big thing. There is also the financial benefit. But as far as I am concerned, the financial side of my job is, it comes with the job anyway. I get paid a fair wage for the things I do, so the money doesn't really attract me. I quite often get jobs with lot more money but that doesn't really work for me, it doesn't motivate. Money is a very short term solution to motivate people. To me, it is about the project, the team morale, working together and the finished product. That's what motivates me, nothing else and adding a bit of social benefit, if you can do that as well on the way, that's fantastic.

Going on to motivate others, because of the nature of the industry we are in, we ultimately produce the end product that's the buildings. I think everyone's got to be on the same wave length that's the ultimate key. Then you got to manage lots of individuals and understand what makes them work. Certain people respond to certain things. You don't shout at people at all times to make a point. So you got to look for things. For the younger staff, you try to motivate them by saying positive things to them, such as you are doing well and also try and lead them forward to the future. The more senior staff are probably

the harder to motivate sometimes, because they are not so green. They have been around a bit longer; they have heard a lot of these things before. So as far as I am concerned, it is getting the team spirit going. If you can, get the team spirit going, a collaborative approach to move your team all working together. And within our team if there is a strength or weakness, we will go to each other and support each other. Most of us have got just one discipline. But, we can mostly do a little bit of each other's job. So if there is a problem we all jump in together. It is team spirit which gets it done. That doesn't work only at management side, but that works throughout the site as well, all the contractors as well.

If so, describe leadership practices you use to motivate others and guide the project?

As I said before, I think the money is a very short term solution. If you give me a pay rise by £2000 tomorrow, within a month I will forget that you have given me that £2000. It is just a figure that appears in the bank account, that's the end of it. I think if you give some rewards to people by praising them when they deliver a job and actually promoting it from that point of view and especially for young staff, giving them some guidance about where they should go, that works. Sometimes young staff need quite a bit of nurturing. They don't always know what they want to do; they are new to the industry and it is quite a hard industry. I have been in it for a quite a long time. I also try to lead by example. I wouldn't expect someone to do something which I wouldn't do myself. I think that's a key thing as well. I don't issue all the rubbish to the younger staff.

B-4) How do you manage issues related to projects such as resource constraints especially project funding and long term objectives of your organisation?

Well, the finance is done through to the nth degree. Because what we have to do is we have to put forward a strategic business plan for these buildings. The buildings are actually viewed as business units, you might think they are health care but they aren't. They are business units; that's the way it is. So the financial side is done to a very fine degree earlier on in the contract. These contracts first came to XXXXXXXX (*main contractor*) in 2001. It took 2001 to 2006 to get it build to its live size, a full five years. A lot of that is due to the design development and financial constraints, so all the pain is done earlier on. Once we agree to a guaranteed maximum price, the button is pressed and we go to the site.

So we are not in a constant battle half way through. XXXXXXXXXXXX (*main contractor*) as a company, we will market test all the trade packages on this contract. So we know when we sign a contract, we are about 85% to 90% cost safe on what we say we can procure at the price we can actually do. So we know where we are. What that does is, that gives us financial certainty from our side, and gives the client his financial certainty and the cost plan is robust. Also it means the risk pot of money can be reduced in value. So the unknowns are reduced. So, we are there or thereabouts. So from a financial point of view that's fine.

Regarding resource constraints from a labour point of view, because of the size of the company and what we do, we don't procure our contractors on a cheapest price basis. The price is an element, but we have a very restricted supply chain. One thing the clients would insist on is that you have to prove a relationship with the supply chain. Basically, you don't get the yellow pages out when you need a contract. You've got to have the knowledge of these contractors from a health and safety point of view, finance, quality and everything else. I worked previously for a contractor. The key is, they didn't get on with the framework at the first time because they couldn't prove their relationship with the supply chain, simple as that. Say, for cladding or something we have only two or three contractors we go to and we can demonstrate best value. We are very open about what contracts are coming in so our supply chain knows what contracts are coming in to us, so they know then what level of work to expect from us. Therefore, they staff up accordingly. So, we are not in a panic situation, where we need loads of men we can't get. Because we are in a supply chain also makes it a lot easier. The thing that we have to do constantly is to demonstrate best value to the client, that's the hard one to do. Because the cheapest VAT price obviously is the best value always. Every package of work we let, say for brick work, we have to demonstrate who we let the brick work to, who has been competitive in the market place and provide best value. So, for instance, on this contract I think the brick laying contractor we picked is more expensive than another. But the brick laying contractor we picked, we knew he had the resources to do this job, could do a decent job and hand it over on time. Therefore, we took a group decision that within the constraints of the cost plan we will go to that brick layer because of surety that he will complete. We put a proposal on which we state the contractors we want to use and for which trade. We put the proposal forward and the basis of that proposal is all these things: cost, programme and all other things. Then it has to be signed off by the client's project

manager. There is a buy-in from all the design team and all the project managers. It also has to pass the client's cost advisor. The client has an independent cost advisor and he will know the current market rate of a package of a work we let for. For instance they may think XXXXXXXXXX (*main contractor*) is trying to take exceptionally more than the current market price, and then they are more than entitled to say that. At that point of time, we will view why there is a difference between the rates; there could be a general reason, it could be someone trying to fix it.

B-5) Were you informed with expected commitments and project goals?

I have been with XXXXXXXXXX (*main contractor*) for two and a half years. There are certain presets on what you got in the written point of view. I took over this contract in December 2006. It was already five to six months into the project. The previous project manager left the company. So I took over from somebody else. There was a two week hand over period. He was wrapping it up and going away and I was taking over. So your target and your goals are quite simple. You've got to hand over the building on time, you got a programme which is predetermined, you got the level of quality which is expected by the XXXXXX (*client*), and same goes for safety. We achieve the safety record and you've got financial constraints. So there is a margin that we've got to generate for this company. All these are presets. Really, your targets have already been set out for you. Then you adopt your management style to what you need to do to achieve the target. There is a period of time, probably two months where you are actually feeling your feet to know where you are, but it did help as well. Because I have worked with lots of team members of this contract; we are actually from the last contract. We came up from another XXXXXXXXXX (*client building*) contract, so, we all moved here together.

B-6) How do you share information with other participants? How is it encouraged?

Not much now, in the final stages of the contract. Earlier on in the contract we had design team meetings. The design team meetings are attended by all the design team, structural engineers, architects, services designers and M&E services designers. Because it's a big part of the client building. Its mechanical services, Hayden & Young also sits on the

meetings and they are the key design people. So, they are involved at the design meetings stage at which point drawings were developed. So, we all worked hand in hand from that point of view. For an element of the building, say cladding, we would bring in the cladding contractor into the meeting, and then he would have his input. So his input would be picked up into the architects drawing and we develop it from there. So, it is a question of having people involved and that's why we have the benefit of the supply chain. Because we know where we are going to go, there or thereabouts. And the contractors know that they will get work from us. So they don't mind sharing their information very earlier on with us. They give us the market information, best technologies, and we can incorporate it in the design. So that the design people have brought it from the early stages and then the design takes it to the full design stage. Once design information is released, then we have the electronic system to draw in the administration and the drawings are automatically administered to all contractors. More than that, it gets issued on a day to day basis through e-mails, like drawings through e-mails. All this will get backed up on a server. According to company procedures it should be backed up on a main server. So, we've got hard copies on site and if there is a problem we can pull back from the server. We had problems with the servers on site and the network connections. So, we try and backup the things to the Regional office server because we know it is more secure, and so has less damage. There are fewer chances of intruders breaking into the regional office so we try and back up everything in the regional office.

How did you balance the loss of competitiveness from sharing information?

We as a company, because of the way we do the supply chain, if we do things like getting information off contractors and giving it to another contractor, who then rips the other guy's price apart, we will be only able to do that once, so we wouldn't be able to do it for the second time. So, we would be shooting ourselves in the foot. That doesn't mean, if we find a new technology we don't share it among the supply chain, and ask the supply chain to work together. All in the supply chain know who each others are, there are no hidden agendas. We know who is doing what, where and why. So because we are so open that's not an issue. They don't mind sharing methodology with us. But that doesn't mean that we always share methodology with the clients. In XXXXXX (*this framework*), we do it because it is so open. Because on XXXXXX (*this framework*), they make a very early

commitment to XXXXXXXXXXXX (*main contractor*) to do the job. On other jobs where there is not so early commitment, we don't show/share our methodology. On XXXXXXX (*this framework*), we are probably 99.5% completely open about everything we do. But in a lot of two stage work it's not always the same because we don't want our competitive advantage leaking to the market place.

B-7) Were you informed of mechanisms that can help with the process of rewarding, payments and savings? Do you seek any improvements?

This contract is set up with a risk and reward scheme like a lot of partnering contracts. The way this scheme works is it's a share of the risk and reward. In the event of us coming underneath the guaranteed maximum price, let's say it is 30 million, if we are coming at 29 million with all the packages secured, everything is procured as per the original contractors proposals and project requirements, in the million pound left over we are going to get a 50 – 50 split. If we finish the project at a cost of 31 million, we take that one million hit on the chin. That's the case. If there is no change in the contract, because the contract was originally signed for 30 million and we ran over, we will take that hit on board. But the problem we have is a very fine balancing act. If you come in too low, you find in the accounting stage that you can be accused for offsetting the bar too high in the first place in the beginning because, you are setting the budget. So, the client will tell you, hold on a second, you told me this will cost 30 million, you have done it for 29, where is that one million that you saved. He's got to pay that one million because we signed the contract. But if you keep doing that they will say that you are giving artificial budgets. We have key performance indicators; there are lots of key performance indicators within XXXXXXX (*this framework*), one of which is the final account and the amount of money left residual or not at the end of the contract. There are seven contractors on XXXXXXX (*this framework*) at the moment. One of the ways they picked us was, you look at the KPIs and they will identify who is giving the best value, who is giving the best market advice, and who is giving the most realistic budget, and the trust. First they look at who they go to, they will say hang on, XXXXXXXXXXXX (*main contractor*) is constantly overcharging. We are not going to them anymore. So it is in our interest to keep the figure as close to the actual figure as possible. If you go slightly low no one will care. If you have done a good job to the client and you have come up with extra bit of money at the

end, they get 50%. And they will say you have done a good job for us, well done lads, take the money. If you come way under budget, they will take a view of well, hold on a second, you had us over there. The other people also got the say on that is Hayden & Young. They are the principal supply chain contractors for mechanical and electrical services on this job. Most of the times the M&E contractor has similar pain-gain share, because they are such a big element of value they can influence by varying design solutions. So there is an inherent interest in the M&E contractor to actually join in with fine and best design solutions to get best value because they get also get a reward at the end. If Hayden & Young go under budget, they will get 50% of it, in the balance 50% left over we get half and client get half. So, we get 25%. So, there is a definite benefit for them to look after the budget.

B-8) What means do you use to solve the issues/disputes arising from the project?

We don't have any disputes in this project. On previous ones we did have occasional issues.

What do you do in case there is a problem?

That's why we have an intermediate project manager. The project manager, the Principal Contractor and the client should be independent and they are employed to administer the contract. He should see what we have done is fair, reasonable and in accordance with the contract. So, if we've got a particular problem, the Trust will say, hold on for a second we are not paying you for that, for instance. Then we then go to the project manager and say, hold on a second, you know, on such and such a contract you should be paying us. Please give us the steer on what direction we should go. The client's project manager will then in theory give us a definite way in which the contract should be administered. The early warning system also does that and compensates events. So if you put an early warning in, for example, this is the early warning, the client wants to change X, project manager should administer that early warning and he would either come back and say, yes, the client is entitled to this, then they may compensate that event. Ultimately, if you get to a level where there is a massive dispute and there is no even ground between the two people within the client and main contractor then high levels will discuss it. But most problems

take so long to resolve, most of the problems should be eyed out well in advance. We still have problems but not many.

There are lots and lots of people involved, obviously, there is a level of management above myself and above commercial manager, but all we really do is we report month to month. So all they know is headline figures, how we get to that is up to us really. So we take a view at it. Occasionally, we will discuss with higher management and say, hold on a second the client wants X, Y & Z. I was recently involved and in my opinion the client was asking for lot more than what they were entitled to. But, our Regional Directors may say, hold on a second, that client has a lot of money to spend and we have a longstanding relationship so let's just bite the bullet and do the work, take a long term view, take a global view.

B-9) Did you get an induction to the project and the project participants along with project goals and objectives?

We all had safety inductions but that is a separate issue. We have a core XXXXXX (framework) team. So there are a couple of guys who told me basically what this job is all about. Told me the history of the job and because I was replacing another project manager, the Estate's Director asked me to meet him to make sure that I was the bloke they were sending. So then I met the Project Director who again told me a bit of project history, he also told me the key drivers of the job which is an important thing. We want to know what he wants. He said basically he knows what he wants, he is a good guy who knows what he wants, and honesty and integrity are the most important things. You've got to tell us where you are, again another handover induction.

As staff come and go what I usually do when they come up to the site you got a new member of staff, you take them for a walk around the site and tell them what you are doing, tell them what is important to the XXXXXXXX (Client's project), tell them what the drivers are, so that they know what they need to do.

B-10) Are there any training programs designed to help you with your work? Do you have a personal choice towards the selection of training programs?

We have training seminars. They do national XXXXX (*framework*) training seminars and XXXXXXXXXXXX (*main contractor*) do one or two days every year where you go off for a day and you get speakers in, so you get health planners who basically design the way the hospital works, the movements and things like that. Health planners, cost planners, tax consultants... so you get bit of information about what's new, what's not, also new methodology. There are loads of XXXXXXX (*client*) Road Shows.

There are lots of shows you can go to but it is keeping ahead of the game really. Regarding the selection of training programs, I get advised automatically and it is up to me whether I go or not. Lot of training is done in XXXXXXX (*framework*), we have a select list of Architects, Structural Engineers, Service Consultants and lot of them would do Road Shows as well, partly from marketing point of view but also from training point of view, so we also get invited to that. So there is lot of Training. Certain Trusts will have certain preferences to architects as well. Not on this project, in one of the Hospital Projects I worked earlier, one Architect has been in that for 20 years because he gets the overall scheme. Development of the hospital is an extension to his original design, so it grows organically around the basis of his design. So sometimes you are tied into people anyway.

B-11) Do you feel comfortable with the current office arrangement? Is it helpful to encourage a collaborative relationship?

We are in an open plan office. We have two conference rooms. Part of the problem with an open plan office is a lot of bouncing going on but to me it is part of the team spirit. People aren't working in isolated corners, also you overhear conversations perhaps you shouldn't but from our commercial stats point of view they overhear conversations and sometimes the alarm bell starts ringing. The shared information is very, very good. I prefer this office environment than little locked offices with shut doors. It doesn't work, not if you are going for a team approach. In my position if you put yourself in a pedestal where you speak to them when you feel then go for individual offices, but if you want to take it to a group approach that's not the way to do it.

Personally, I think the other consultants should be in different places. I don't have a problem with us. We are actually looking at another phase of the building. Hayden & Young are doing our M&E at the moment. Probably won't be doing the M&E in the next

phase probably it may be an in-house company. If they come in we have to split off the office and give them half the office. I might bring in the design team here because they are very close to us. But, I don't think it works with the client in the office. On the last job we had the client's representative in the office and he was listening to the conversations and stuff was getting back. But, not always the full story was going back, which is a problem. At times whispers are not the right messages that should be going back. An individual's take on things isn't actually always a team approach. An open office is best for this project.

B-12) Do all the parties buy in to the open book policy? How did you contribute to that?

You get an odd individual who doesn't want to. The other individual, it is my piece of information and doesn't share it out. It is quite hard to get the information out of him. But most of our people are quite open and honest. Most of the people if there is a piece of information to be shared, you share it with each other so that we all know where are. You do get that individual.

Most people can't keep their mouth shut for that long anyway. When you are walking around with them you ask some questions and you ask them in a certain way, you can find out all the information you need. There is a specific system within our company how stuff should be backed up on the servers. So, information is readily accessible anyway. So, it is about people always being open about where stuff is, on the servers.

B-13) Was there any attempt to encourage pain gain sharing? Briefly explain.

The pain gain sharing process is declared at the beginning but you can't find it until the final account. But it is done up front earlier on. I have worked on other jobs where towards the end of the contract on partnering, they then agree the pain gain share. I feel more comfortable with this as you know where you are. The hard thing from our point of view from the pain gain share is that, we have to take a view quite early on where we will be. It's a very hard job for our commercial team to declare where then final figure will end up because obviously as a company we don't want half a million pound disappearing one day. As a company we need to know what's coming in and we need to know in terms of cash flow and everything else. So it's a very hard balance the lads have to play to get that

figure as close as they possibly can. We don't like any surprises and we don't like them either way. We want to know where we will be at the end. It's quite a hard game to play, because some contractors will take it that you are only going to get your management fee which you will get and that's it. Knowing where you are in that pain gain share is important. So you project the final account, our quantity surveyors constantly are projecting the final accounts forward. So we hopefully know and manage it within the constraints.

B-14) Do you see role models or mavericks in the project? Were there any discussions about them?

In my opinion the role models in this job, there are a couple of them on this job who stand out to me, one is XXXXXX our Commercial Manager, who is very, very honest, very open, very friendly and probably one of the best commercial managers I have worked with, also, a nice lad and also one of the lads. He is really good; he is a real benefit to this contract. Then other one would be XXXXXXXXXXXX who joined just after I did. He is absolutely a fantastic lad. He talks the talk and he does the walk, all the lads admire him and for a young Asian kid to come in the construction industry and to break down the barriers he has, he is absolutely remarkable and I think he is a real credit to the company. He will go far, whatever he does in his life he will go far but he is a real role model. If we've got to push it at the end of the contract, like myself, he will do the hours, we will get the job done which will make the people happy. He is absolutely fantastic. So we have a few people like that in the team and that is great. But it is all about team morale. Young Saj got Sammy so he reports to Saj. He is looking at the work Saj does, what he does, what effort he puts in, and benchmark against other people. That's how it should be. They stand out on their own merit. You can see who is who.

B-15) How often do you meet other project participants? How is your relationship with other project participants?

Probably, every other day I speak to them about day to day issues. From the client's point of view we have monthly board meetings, they set up individual boards for each hospital

development, so, there is a cardiac board meeting, to have monthly meeting with those people. Lot of these people are surgical anyway, who don't deal with other side, the end user. We probably speak to the Estate Director once a fortnight; we speak to the client's Project Manager every day or every other day, speak to suppliers all the time. We try and meet face to face. If we have a problem we would rather war it out. We try and avoid sending bits of paper out. That's not the way we do business. Some contractors will quite happily send bits of paper but we would rather have the discussion face to face. It's hard to find out if someone is lying when they send you an e-mail.

B-16) Is there any pressure from top management? How are you managing the imbalance of power? Is there any attempt to change it?

No, not especially no. We do a report every month, to show exactly where we are. If you are a XXXXXXXXXX (*main contractor*) Project Manager you are the master of your own destiny. If you change something for the benefit of the job as a company they will back you up, even if you've got big expenses involved, particularly with safety. Some are designed that way, it's unsafe to do, you put your people at risk, as a company they would rather lose the money to get it done safely. So you get 100% back up. You get interrogated if it's a loss, obviously the job where you lose the money attracts attention but as a company they are not based upon a blame culture.

How are you managing the imbalance of power? Is there any attempt to change it?

No, it doesn't get solved easily. It is knowing who the key players are and seeing who got the shout. Some of the Project Managers employed by the Trust, some are very strong characters, they know what they want. They employed a Project Manager as an intermediary, but you don't really want him there. They would rather stay there roaring all the time and get bitten and sometimes they forget it is a partnering contract. Sometimes they think in a partnering contract we get the best out of partnering, so we can shout at contractors, we can tell him to do this, we can tell him to do that, what we try to avoid as a company is we try and not to go with a claim mentality so that we don't revert to the old ways where we went at 1% and we lost all the money through and there has to be a claim at the end. We avoid that at all possible cost. So, what we can do is when you get stakes like that you have to play the contract. And to play the contract you make the project

management in the middle earn his money. You stop speaking to the Trust if that is the case. They employ an intermediary and get that man to earn his money. He is there to administer the contract, get him to administer the contract. Try not to fall out with the Trust, but there is a way of doing it if you really have to. Some of the Trust people are very strong, some of the Trust people have massive pressure on them. They've got all sorts of consultants expecting the world, they've got end-users expecting the world, and everybody wants something. Budgets are always tight and they always want a bit more, wherever we can we will help him. For instance, if we know there is going to be a residue of money at the end, quite often we start diverting to enhance the job. So we don't show too much of money at the end, if there is imbalance on the job we can introduce them as we are towards the end. It won't cost any more money. It depends on to whom you talk to and how you administer. The problem is the personalities.

With any contract, there are very strong personalities and the problem is my perseverance. I am obviously biased towards the contractor, a lot of clients sign up to partnering and I have worked on three different types of partnering. A lot of them decide to do partnering but they only see the benefits of partnering as they want to see them. So it is the best bits. So what they see is at the end of the job, you don't get any claim, they don't have to lock their heads all the way through and they can carry on as normal, but that's not the case. To do a partnering job properly, it's a two way stream and to me the time the client shows their true colours in partnering is when there is a problem. When there is a problem and there is a collaborative group approach to solve it, then you know it's working. When there is a problem and say I'm sorry there is a problem and walk away from it, you are on your own and you know it's not really partnering anyway, just going through the motions.

B-17) Is bottom-up communication encouraged in the project? How it is encouraged?

Because this is not a large contract, this is worth about a building cost of 17 to 18 million pounds, it is not too bad. I've got the time to walk around, so I walk around a minimum of once a day sometimes twice or three times a day. I don't try to walk around too much because if you walk around too much all the time I am taking away the power of construction managers. Even though Sajit and Sam are very good, the lads will automatically come to me because I have been doing it longer and I am quite

approachable. But by walking around you see people so what we do is we walk around every morning - myself and the construction managers to set people the work of the day, the task of the day, or to the lads you are doing such and such. At that point, this time this is changing or that is changing, so it is a question of passing information down. If we are a company purely living in paper work we will never be able to do that, because we will be hoping someone will pass some of the e-mails. So we send e-mails to these people's boxes, we send revised drawings out, but in our own minds we know where we are, we pass that down verbally to the lads. And also lads pass problems back to us, and vice versa, by chatting to them every day. So site walkarounds are the best way to do it. So that I know where we are now and where we should be tomorrow in my mind and the day after. If you don't, you lose control. If it is really a big site you can't walk around every day but you have more senior construction managers who will do that role again and report back to you. You know where they are and where they are going. But, even then to me you are a brave man to take everyone on their word. Sometimes people don't see the bigger picture. You have to walk around to make sure what people are telling you is actually their perception on things, they can sometimes get so engrossed in the job, and their perception isn't really how it should be. However, I don't mind working in a big site, because people don't lie to me that often. They lie to you when they want to achieve something or when the trust is broken and there is a difference in lying and interpretation. When people lie to you, you don't believe them again. That's the end of it. It's just gone.

B-18) At what stage did you get involved in the project? Were you able to build/fit into the project team?

First part of the question – answered already.

It probably takes about two months to fit in with the whole group in the site. You see people involved in the meetings and people wait for you to actually sort out something for them, until they see you sort out the problem for them they don't always think that this is the guy trying out. So, you build trust by doing things reasonably in a short period of time. Regarding XXXXXXXXXX (*main contractor*), 50% of the team here anyway was from last project, so I knew them. The other 50% it took a few months to know what their strengths and weaknesses are. It's about knowing what makes people take you heartily, I think.

B-19) How do you think 'individual reflectance/inability to change' can be tackled? How do you encourage others and yourself to hold a positive attitude, especially during negotiations?

It's very hard to do. Some people are very set in their way, it is hard to do. Most of the people we work with, you can only encourage them to actually make that first step, most of the time people make the first step and are totally open, fair and reasonable. And as long as the experienced people go first that's fine. But if they have been bitten they don't want to be bitten again and we've got some contractors who have worked with past hospitals who won't work with us again because anything they thought they are going to get, they didn't get. Because the client is thinking that partnering is to be the end to all and they can still carry on in their old ways. Some people think that partnering is where you can sit back and it all just comes to you. It doesn't take some work. Some people get disillusioned by it. They think they automatically generate things. If it is contractors' certain margin the job is guaranteed to make £X and through their own abilities they lose money and then they lose confidence in it. It is all by experience, that's all you can do.

What you need to do is, strictly with contractors and people, you speak to them all the time and lots of contractors won't open up to you; you've got to say something like how's the job working for you? How do you see the job going? For me, I might think the job is going great but they may not be all that happy. I walk around and talk with senior managers and talk with them and you get the feeling how they feel. You also feel whether they are generating the money that they should be generating or not. We had an issue earlier here between M&E contractors and M&E designers, we employ designers, and the information was coming through quick enough. It is far better for us to say to the M&E contractors that we've got a problem with this. This guy is holding us up we need this and that and going through all the stuff. At this point, we can then react, then we get the people and have a chat and we get the commitment. It is about communicating with them and making sure people are getting everything that they want and everyone is happy.

Section C – Final comments

C-1) In your opinion, what are the primary purposes or ends of leadership?

As a leader you should be delivering the ultimate goals, you must find the ways to deliver that goal. So be it programmed, quantify financially, safety, we should be delivering all those goals. That's the one for me. I think also you should be working as a team leader and developing a social workforce where you all feel part of the team, you also feel the need to be needed in my opinion, people like to be wanted, people liked to be valued, it's about making people feel valued. Making people feel part of the team and not taking all the glory yourself. When you hand over on time, it's not just you who does it, it's people answering the phone, its people doing the piling, its one big team effort, and this goes all the way through from the management right down to the lads cleaning the site toilets, that's the key thing for me. You've got to make everyone feel part of the team. If there is a problem they should solve the problem out and when it's successful, celebrate the success and celebrate together. For instance, we had a get-together last year when the roof was on because a lot of the contractors won't be here when we hand over. They are the lads who worked hard for months. Just saying thank you and that goes a long way. Just say you did a good job that goes a long way. Financial rewards, I don't like that. It doesn't last.

C-2) How do you value your concern for people against concern for production?

If it is concern for people from a safety point of view, to me that's on a pedestal. I have been involved in a fatality in the past, I've been involved in sites that had people seriously injured, not my fault. But that doesn't make you feel any better. But I was there when it happened. So, I say good bye to my wife and kids in the morning and all the people do the same. With regard to safety, my priority is people, first and foremost. If it is about people versus production from a feelings point of view, I hurt someone's feelings by pushing for production, I am quite happy to hurt their feelings, that doesn't really bother me. I'll try to avoid it, I'll try to encourage people in a way to do things and cover his feelings away but what I try to do is, try not to tell the people how to do things. We employ our own joiners, brick layers and labourers. If there is a job to be done, I always ask the lads how you would do it, because lads will always work ten times harder to

achieve success, if they say, and that is what this is about. I don't go around and say how to do this, you must do this, you must do that, I lead them in the right direction, but from the technological point of view I will try and encourage them. A working solution, they take the ownership of it, they will take it to completion and feel proud of it.

C-3) What practices do you adopt to make other participants and yourself act in a collaborative way in the project?

With the site team, I always try and get a bit of laugh, that sort of thing and get going a bit, buying cakes. You've got to appear to be human and always make time to speak to people. I always try and say hello to people. Sometimes it appears that I don't do a lot, I'm always answering their e-mails. I always try and speak to people and groups of people. I still do my job but it is part of being recognised as a social individual. I know other project managers in this company, who may know what sort of staff they put themselves into, a lively tower. But then their staff quite happily see them fail. I don't believe my staff want to see me fail or the company fail. Also I try and be fair with things like people who want to go and see their dentists or one of my staff ring me up and say that they got a problem at home or their children are ill, I will ask them to book a day holiday. I know kids take a lot of strain, and lots of them are girls.

C-4) What is the most critical factor for the implementation of leadership to address cultural and behavioural changes?

It sometimes helps to go back to what we used to do, people mourn certain things. As you see, I have worked in the past in hospitals where I would work for 2 years. You end up in claims and that's the way it was. And the Trust is as well sometimes be reminded of the way it was. Most of the Trusts are quite clued up. They know how bad it was, they know how good it is now. It is just pointing that out. It is just reminding people where we are, not perfection, not heaven, but we are lot better. We are getting better all the time. From the site point of view, the lads are working in better conditions than ever. To my mind, getting better rewards than ever, the pay is far more attractive than it used to be. Some of the lads were talked to like dogs. It is absolutely disgraceful from a site manager's point of

view. I always personally treat people like a decent human being. Always better not to give into the doubts.

C-5) How do you build/induce trust between parties and shift away from the traditional blame culture?

I think it helps by being more personal to them rather than sending e-mails all the time, I believe, if you have problem. If people want a favour they will always find time to ring you up to get a favour. If there is a problem I think a phone call saying look there is a problem here I think we need to sit down and have a chat, you know there is an issue let's sit down and have a chat, think it about being personal, being one to one with people, completely honest, telling them the truth even if it hurts and it's getting you away from the culture of covering yourself in paper work and hiding the paper work and being personal with people. We still do back up with paper work if we need to. If we went to court we would be protected. But there is a way of doing it first of all. Most of the time we go to the client and say, there is a problem. I have worked with a Trust when there was a problem with finance, the client settles it up if there is a problem and some other times they will help you, some other times they can't, at least you have been honest.

We, as a company, have come across that problem of people hiding issues all the way through in the past, hoping that something will come out of it. All that happens at the end of the day is that people get hold of the job at the end, look wise, not having made money and the next thing you know is you get a big claim. Somebody in the council will look at this and say this shouldn't be done and you don't want that. Just trying to get people completely upfront that's quite hard but again just hoping that things will get better doesn't always work. In meetings with contractors, I'll say to them that we are behind in the programme. You just need to be honest.

C-6) Have you used any other tools/programs to help to achieve project objectives?

Community of practice as mentioned before.

Within the company, we do it in different ways. From a safety point of view, we sit down every month with all the other project managers. So we share information, problems,

technological solutions - the things that are put into market not from the market point of view but from the construction point of view which will help the contractors' views. So we are not struck, we improve technical updates, engineering updates.

The work force is quite fragmented. It is not too bad, most guys here are northern lads. So they are northern lads really so it is hard to organise things. With regards to the site team we try to grab meals and we try to play ball.

C-7) How did you manage the impact and influence of external environment to the project?

We don't really get them. The last time I had a problem with impact was with fuel blockages about 5 or 6 years ago and that brought the site to stand still for about a week. Try and tell them to come on site and then we re-group. Try to improve the morale. The biggest impact I had was a fatality. Because if there is a big accident it brings the whole site down. It roots the morale. If the morale goes to the floor it is a very bad position to be. All you can do is try and build the team morale up, push forward towards the goal, encourage people to get towards the finish and get to the finish as soon as you can.

We've got to go around, talk to them, have a laugh with people and try and distract them from these things and look beyond and move forward. This is about communication. If you get to be a leader and if you can't communicate, you've got to be fantastic at things like your technical ability, not good but outstanding. That can make up for your communication. Communication skills are the ones which are going to make it or break it. And also the ability to communicate up and down. I have a problem with communicating up because what you see is what you get. National directors have come down here and I try and be honest with them. It is about being completely true to yourself I believe.

C-8) Describe the main strengths and weaknesses of the current leadership.

In my opinion, my strengths would be I'm a strong communicator. I think I'm quite a good communicator, very good team player, technically I'm one of the best ones at XXXXXXXXXXXX (main contractor) not purely on a building point of view.

My weaknesses are sometimes I'm not firm enough with people particularly with contractors. I do like to take their word and occasionally that has bitten me. But I like to take people on what they say. That's probably a weakness. Another one is, I believe things on how I believe them to be. I work for XXXXXXXXX (*main contractor*) today, could be next week or not, but I'll be the same person. I believe the company attracts certain types of people. In my first interview by a director, he said you would be working for me. There is a definite between me and him. I think it's hard to join a company which is completely different from your own way. There are certain contractors in the UK I would never ever want to work with because the culture is so different.

C-9) What are the critical leadership practices to achieve project objectives?

It is about knowing where you are at a point of time; don't dilute yourself, be honest with yourself, be critical about yourself, and knowing your objectives, and knowing what makes the client tick, knowing what the client's drivers are or what he is passionate about. Once you identify those then you can aim towards achieving them.

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