DETERMINANTS FOR ACHIEVING BEST FOR PROJECT SUCCESS OUTCOMES THROUGH OPTIMAL EMPLOYEE ENGAGEMENT BY ORGANISATIONS OPERATING ENGINEERING ALLIANCES

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Abstract

This thesis advances the development of an employee engagement model for organisations operating engineering alliances, weaving academic theory and engineering sector practice to fulfil the requirements of Staffordshire University's Doctorate of Business Administration. It makes a contribution to theory through the extension of Kahn's (1990) model of employee engagement and its application to engineering alliances with contribution to management practice presented as the first known employee engagement model for engineering alliances that has been commercially tested with major infrastructure owners within the United Kingdom.

The practitioner-researcher has over 12 years' experience leading engineering alliances in the United Kingdom and has witnessed organisational and managerial problems regarding trust and communication between partners (Chan et al., 2007). The purpose of this research was the development of a model to benchmark the success of an engineering alliance with the aim of developing a collaborative model that optimises employee engagement and evidences project outcomes of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994). The objectives of the research were to: identify key supporting theories, determine the characteristics of the proposed model, develop the model through three case studies and present the model's contribution to both management theory and practice.

Extant literature identified positive engagement (Kahn, 1990) as seminal work in employee engagement models for singular organisations. Kahn's (1990) model was extended by Maslach and Leiter's (2008) antithesis to positive engagement, Xu and Cooper-Thomas' (2011) leadership characteristics and Scholl's (1981) organisational commitment to represent the role that organisations play in an alliance. Further praxis contribution from Macleod and Clarke (2009) supported the model development through leadership. The 'best for project success outcomes' were identified as trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994).

A multi-methods approach using qualitative and quantitative data collection and analysis was adopted with an interpretive philosophical position. An inductive approach was used to deliver the research with specific methods of ethnography, questionnaires, semi-structured interviews and observations used to collect the data. Theory building was emergent and adopted the triangulation of findings through coding of data and management of personal researcher bias. Three case studies were used with a cross sectional time horizon to support the research data collection, analysis and development of the employee engagement model for engineering alliances.

The proposed employee engagement model is underpinned by five theoretical concepts of: systems thinking, social exchange theory, game theory, principal-agent theory and cost transaction economics. Through the use of concept mapping the developed model identified four concepts of leadership, community, employee voice and behaviours which were combined to evidence the 'best for project success outcomes' of trust, interdependence, co-ordination and communication. The model has been tested in engineering alliances in the United Kingdom, leading to improvements in the 'best for project success outcomes' of trust, interdependence, co-ordination and communication.

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1 <u>Introduction</u>

This chapter outlines the need for the research project and states the researcher's personal rationale for undertaking the research. It continues by defining the rationale for the choice of literature and outlines the aims and objectives of the research. It concludes with an introduction to the research project in readiness for the literature review in chapter two and additional signposting of future chapters.

1.1 *Purpose Statement*

The purpose of this research was to develop a model that could be used to benchmark the success for organisations participating within an engineering alliance through the optimisation of employee engagement. This research will, through the application of concept maps, derive four main characteristics of employee engagement; authentic leadership, community, employee voice and behaviours between participating organisations. It advances the seminal work of Kahn (1990) by weaving it with other academic theories to produce a model that has subsequently been applied to industry.

1.2 *Researcher's Personal Rationale*

The practitioner-researcher has been involved in leading engineering alliances within the rail and energy sectors of the United Kingdom for over 12 years and recognises a real organisational and managerial problem based around constructs of trust and communication between partners (Chan et al., 2007) exists. The practitioner-researcher has experienced a number of successes and failures within engineering alliances. Success stories have included delivering the project on time and to budget within a challenging timescale. Whilst failures have included working within an alliance whose partners were in constant conflict and the project failed to deliver on time and to budget, and yet, with the occasion that the ultimate client was actually pleased with the end product, which could suggest the alliance was actually a success. This confusion surrounding what is success in an engineering alliance and how can it be replicated was the catalyst for this research project.

Furthermore, both failure and success stories omitted the contribution of employees and the role that they play in engineering alliances and it was from this perspective that the research project evolved. There was a professional determination to better understand how engineering alliances operate and how they can be improved to achieve superior project success (Taylor, 2005) through the contribution of employees as opposed to the payment of fees, bonuses and penalties. This resulted in employee engagement being studied because engineering alliances are human centred constructs (Pansiri, 2005) and as such, their success may be dependent upon the employees.

1.3   Rationale for Choice of Literature

There is paucity in the development of models related to employee engagement and the practitioner-researcher opted to use Kahn's (1990) employee engagement model because its research was developed within a professional services firm which is representative of the practitioner-researcher's employer and the contextualised setting of this research. Kahn's (1990) model presents manifestations of positive engagement through concepts of safety, availability and meaningfulness which needed to be extended through disengagement characteristics, leadership characteristics and the findings of professional praxis to form a more holistic employee engagement model that fuses the individual and group phenomena associated with employee engagement, which thus extends the employee engagement model of Kahn (1990).

The work of Schaufeli et al. (2002) was reviewed but dismissed because their work addresses methods to measure employee engagement and not, as is a central tenet of this thesis, manifestations of employee engagement. Kahn (1990) was chosen to reflect the personal rationale for this research; the literature supported the initial concept that employee engagement can be used to measure the success of an engineering alliance but current theory needed to be extended to solve the organisational and managerial problem based around constructs of trust and communication between partners (Chan et al., 2007).

1.4 Researcher's Personal Journey Towards Contribution

This thesis makes a contribution to theory through the extension of Kahn's (1990) employee engagement model and its concepts of meaningfulness, safety and availability. These concepts are further weaved with Maslach and Leiter's (2008) disengagement concepts of control, workload, recognition, reward, fairness and community as well as the leadership concepts of challenge, autonomy, self-confidence and interactions (Xu and Cooper-Thomas, 2011), forming an extension of employee engagement from the perspective of the employee. However, this extension to the model does not recognises that employees come from different organisations and Kahn's (1990) model was further extended to incorporate the employee engagement concepts of organisations, recognising that alliances are human centred constructs (Pansiri, 2005).

This extension was achieved through Scholl's (1981) organisational commitment, recognising that it is not only employees who contribute to an alliance's success but also the organisations that form the alliance. Further extensions of Kahn's (1990) model through practice-based contributions and concepts of leadership style, employee voice and integrity (Macleod and Clarke, 2009) delivered industry best practice thinking to the model. It is the melding of extended theory and praxis that makes a contribution to theory.

This thesis makes a contribution to management practice by presenting the first known employee engagement model for engineering alliances, offering organisations an opportunity to measure the best-for-project success outcomes of 'trust, interdependence, co-ordination and communication' (Mohr and Spekeman, 1994), and has been subsequently endorsed by industry with the developed model being commercially sold to major infrastructure owners.

1.5 Aims and Objectives

The aim of this research was to develop a collaborative model that optimises employee engagement in an engineering alliance, and evidencing achieved project outcomes. The objectives of the research were to identify key supporting

theories, to determine the characteristics of the proposed model, to develop the model through three case studies and, to present the model's contribution to theory and management practice.

1.6   Introducing the Research Project

This thesis is contextualised within the engineering sector, where alliances are a much studied phenomenon (Taylor, 2005); have been in existence for more than 20 years (Morwood et al., 2008, Kanter, 2002); and that the 'best for project success outcomes' of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994) continue to receive mixed results (Taylor, 2005), resulting in organisations not always achieving their stated goals (Kale and Singh, 2009; Finlayson, 2011) of profit and turnover (Judge and Dooley, 2006).

Organisations are choosing to engage in alliances to achieve superior project success (Taylor, 2005) through strategic objectives regarding profit and turnover (Judge and Dooley, 2006) and aligned goals (Jones et al., 2003; Walker and Johannes, 2003) but they are not always successful. With failure rates of up to 70% (Taylor, 2005) and only 9% considered to be a success (Steinhilber, 2008), the engineering sector continues to persist with alliances, referring to themselves as groups of companies that link together for a common purpose (Casseres-Gomes, 1994). When establishing an alliance, both participant organisations and the owner organisation focus time and effort on the payment of fees, bonuses and penalties and that they will stay together for the duration of the alliancing contract (Morwood, 2008). This focus is often considered to be the "best for project success outcomes" in terms of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994), resulting in organisations achieving their stated goal (Kale and Singh, 2009; Finlayson, 2011) of maximised profit and turnover (Judge and Dooley, 2006).

It is possible that the best for project success outcomes can be measured through employee engagement (Gennard and Judge, 2010; Macleod and Clarke, 2009). The praxis literature offers a number of definitions

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for employee engagement (Macleod and Clarke, 2009) but it is possible to draw upon a common themed definition that employee engagement concerns unlocking people's potential at work (Macleod and Clarke, 2009) by measuring an employee's positive or negative emotional attachment to their job, their colleagues and the organisation (Vaijayanthi et al., 2011; Mirvis, 2012).

It is from this perspective that this thesis advances the development of an employee engagement model for organisations operating within engineering alliances. It is based on the weaving of academic theory and engineering sector practice with a particular focus on rail and energy sectors. These sectors were chosen because of the mixed results (Taylor, 2005) in engineering alliances and the need to achieve the stated goals (Kale and Singh, 2009; Finlayson, 2011) of profit and turnover (Judge and Dooley, 2006).

1.7   Signposting the Thesis

This thesis continues with chapter 2, a literature review, to understand what exists and to position the literature and theoretical underpinning to employee engagement model research.

Chapter 3 explores the research approach applied to the study and justifies its philosophical position, research design and instruments selected to deliver the research; namely questionnaires, interviews and observations. The thesis continues with chapter 4, data analysis, whereby the outputs from the questionnaires, interviews and observations are analysed using various techniques, such as coding and triangulation.

Chapter 5 then explains how the employee engagement model is developed into a practitioner relevant state to address real-world organisational and managerial engineering-alliance challenges. The thesis concludes (chapter 6) with articulation of the contributions to both theory and practice.

2 <u>Literature Review</u>

This chapter investigates and critically reviews literature and theory to underpin the developed model that was taken forward within the research. It is structured to develop a series of definitions related to terminology, such as alliances, engineering alliances and best for project success outcomes. It then critiques the literature pertaining to employee engagement and underpinning theories such that the concepts of the employee engagement model are determined for continued use within this thesis. This chapter concludes by suggesting extensions to Kahn's (1990) model for employee engagement, which can be applied within an engineering alliance context. This presents the development of a collaborative model which optimises employee engagement within an engineering alliance, thus evidencing achieved project outcomes.

2.1 *Defining an Engineering Alliance*

2.1.1 *What is an Alliance?*

According to Solesvik and Encheva (2010) organisations enter into alliances because they are unable to influence industry conditions relating to the scarcity of human resources (Taylor, 2005), leading to organisations seeking ways to bridge a gap in knowledge and capacity between current human resources and expected future requirements (Hoffmann et al., 2001). Organisations seek to bridge the gap in knowledge and capacity (Walker and Johannes, 2003) to strengthen their position within these industry conditions (Hamel et al., 1989; Yang, 2009; Inkpen and Ross, 2001). This results in organisations achieving access to scarce human resources (Taylor, 2005), making them better placed to achieve business objectives (Teng and Das, 2008) through alliancing. This infers that alliancing is a known and understood approach to delivering projects where there is a need to bring human resources together to deliver a project. The bringing together of these resources will need to occur in a short period of time but it does enable organisations to bridge the gap in knowledge and capacity without incurring the financial costs and timescales associated with recruiting directly.

However, the term alliance is described differently within literature (Baker et al., 2011) and it is important to establish the term within this thesis. An alliance can be defined as a voluntary informal arrangement between two or more organisations involving the sharing of human resources (Chung et al., 2006; Johnston and Staughton, 2009; Luo and Deng, 2009) to create competitive opportunities to achieve a common business objective (Albani and Dietz, 2009; Bignoux, 2006; Cimon, 2004; Connell and Voola, 2007; Huggins, 2010; Judge and Dooley, 2006; Mandal et al., 2003; Parkhe, 1993; Teng and Das, 2008). These voluntary informal arrangements are termed as alliance relationships that include collaborative relationships, partnerships and joint ventures (Taylor, 2005). Collaborative relationships, defined as two or more organisations working together to achieve something they could not achieve on their own, operate as a form of inter-organisation co-operation (Baker et al., 2011; Solesvik and Encheva, 2010) because individual organisations no longer have the depth and breadth of capabilities to compete on their own (BSI, 2010). This 'inter-organisation' cooperation requires a degree of trust between organisations (Taylor, 2005) without the need for a contract (Morwood et al., 2008). Where the voluntary arrangement is required to be formalised because the risks associated with the project need to be formally owned, a contract is required, changing the definition of an alliance from a collaborative relationship to a partnership (Morwood et al., 2008). A partnership involves both parties working closely together in an environment of trust and openness, which places less of a focus on the legal status of the partnership, instead focusing on the desired behaviours of the organisations (Morwood et al., 2008). A joint venture involves two or more organisations contributing human resources to the formation of a new separate subsidiary, jointly owned by the organisations (Morwood et al., 2008; Teng and Das, 2008).

All of these definitions can apply within an engineering alliance; there are not explicit rules that determine that one particular type is not acceptable. It is dependent upon the project and the participating organisations and how they wish to formalise the method of working together or if they need to formalise it all. It is possible to examine if an engineering alliance has a preferred method of working together and what underpins that method of working together.

2.1.2 What is an Engineering Alliance?

An engineering alliance is an alliance that is contextualised in the engineering sector; whereby alliancing contracts that have been in existence for more than 20 years (Morwood et al., 2008, Kanter, 2002). Within the engineering sector, partnerships are currently the preferred alliancing arrangement because the creation of joint ventures requires a significant investment of capital (Johnston and Staughton, 2009; Teng and Das, 2008) and more often than not, a government agency or private client is part of the alliance (Morwood et al., 2008), whereby the investment of capital can become more complicated. The inclusion of a government agency or private client within the alliance is viewed as addressing the problems of poor communication, cooperation and trust, preventing an adversarial working relationship amongst organisations (Chan et al., 2007), which is a perceived (non-anecdotal) problem with engineering alliances and often referred to as the breakdown of an engineering alliance; this view is not formally recorded but is often replayed during meetings that are held during times of financial or programme crisis within the engineering alliance. The inclusion of a government agency or private client to co-ordinate the activities amongst the participant organisations (Morwood et al., 2008) is often perceived to control the predatory instincts of organisations to steal skills and human resources (Taylor, 2005), so that the best for project success outcomes may be achieved (Morwood et al., 2008). For the purpose of this thesis an engineering alliance is summarised as:

> *'A partnership between two or more organisations working closely together in an environment of trust and openness (Morwood et al., 2008) that involves the sharing of human resources (Chung et al., 2006; Johnston and Staughton, 2009; Luo and Deng, 2009).'*

This definition represents how organisations working within the engineering sector come together to share human resources to deliver projects. It identifies that there is a perceived environment of trust and openness that facilitates exchange of human resources and in-turn the skills that those resources bring with them to deliver the best for project success outcomes.

2.2 What are Best For Project Success Outcomes for Engineering Alliances?

The 'best for project success outcomes' of alliances are perceived to be difficult to establish because of the complexity of an alliance (Chan and Harget, 1993) with respect to its construct as a business model (Morwood et al., 2008). The complexity and form of an alliance relates to the blending of employees from two or more cultures (Rahman and Korn, 2010) to form a singular project team. This singular project team is representative of the alliance, whereby the alliance needs to acquire human resources quickly because they cannot be hired from the labour market in a short time frame, resulting in the evolution of an alliance and the coordination of the employees.

Whilst it can be argued that organisations enter into voluntary arrangements (Chung et al., 2006; Johnston and Staughton, 2009; Luo and Deng, 2009) to create competitive opportunities to achieve a common business objective (Albani and Dietz, 2009; Bignoux, 2006; Cimon, 2004; Connell and Voola, 2007; Huggins, 2010; Judge and Dooley, 2006; Mandal et al., 2003; Parkhe, 1993; Teng and Das, 2008), the risk of cooperating with each other is overshadowed by diverging and incompatible goals (Chan and Harget, 1993). These diverging and incompatible goals often exist beyond the sharing of human resources and can have an impact upon the success of the engineering alliance because they can directly or in-directly impact upon the resources. Cooperating with each other is underpinned by transaction cost economics, whereby the mandatory exchange is skills and knowledge via employees, yet there is a further exchange that is needed by organisations. Cooperation is further underpinned by the need for trust and that each alliance participant organisation works towards the same common business objective. According to Sendjaya and Peketri (2010), trust is a fundamental factor for cooperation within organizations and in everyday interactions between employees. The fundamental nature of the cooperation is driven by the need to communicate honestly and to share knowledge, a characteristic of the definition of an engineering alliance.

It can be argued that sharing knowledge reduces the competitive advantage of the employee or the organisation but it's trade off should be the increased

competitive advantage achieved through efficiency (Solesvik and Encheva, 2010) by working together across boundaries (Weiss and Hughes, 2005). Given this, it can be argued that trust is a psychological state that compromises the intention to accept vulnerability; based upon positive expectations surrounding the intentions and behaviours of other employees (Solesvik and Encheva, 2010) or partner organizations. However, the overshadow of diverging and incompatible goals caused by the potential competitive advantage that organisations can achieve individually rather than collectively (Vanpoucke and Vereecke, 2010), suggests that trust is not always on the agenda regarding best for project success outcomes; proffering the notion of problems of poor communication, cooperation and trust (Chan et al., 2007).

Mohr and Spekeman (1994) describe alliance success as having antecedent to counteract this 'overshadow', which are behaviours and communication. This antecedent identifies trust, interdependence, co-ordination and communication as individual behavioural concepts. These behavioural concepts relate to human resources which are considered key to the success of the alliance, by ensuring that participant organisations achieve their stated goals (Kale and Singh, 2009; Finlayson, 2011) through the pooling of resources (Jones et al., 2003) and the need for alliance participants to rely on each other though trust, communication and coordination to negate the problems of poor communication, cooperation and trust (Chan et al., 2007). Recalling that engineering alliances are merely human centred constructs (Pansiri, 2005), an investment is made in employees (Jones et al., 2003) with a strong emphasis on the way in which they are managed, targeted, measured, incentivised and rewarded (Hawkins and Little, 2011a:2011b), which is underpinned by transaction cost economics and the identification of the costs associated with achieving the best for project success outcomes.

Yet, Hawkins and Little (2011a:2011b), who were commissioned to develop a standard on engineering collaboration frameworks, did not identify how the best for project success outcomes can be managed and understood; instead proffering a unitarist approach to the problem in the sense that the greatest good for the greatest number (Audi, 2007) of employees shall be achieved. In order to

address the lack of management and understanding, a different approach regarding the management of the best for project success outcomes is required. Employees deliver the best for project success outcomes leading to human resource management being considered as the technique by which the best for project success outcomes are achieved (Muller, 1999). According to Lajara et al. (2003), employee problems can decide the success and failure of an alliance and that a good human resources management approach can identify the skills and positions that are required to have the greatest impact upon the alliance's effectiveness. Muller (1999) describes human resources management as a modern management technique, with values of human resource management being unitarist in nature, that is to say that there is a one size fits all approach to the problem. Muller (1999) suggests that the actions of the management within the alliance are legitimate and rational and that employees who conflict with the actions of management are the bi-polar opposite (Aborisade, 2008).

Yet, alliances are a complex business model (Morwood et al., 2008) between two or more organisations that involves the sharing of human resources (Chung et al., 2006; Johnston and Staughton, 2009; Luo and Deng, 2009) and it is plausible to suggest that unitary theory and alliances may not be wholly compatible. This assumption is defined by the blending of two or more cultures (Rahman and Korn, 2010) that form the business model of the alliance. Aborisade (2008) suggesting a pluralist approach, i.e. people are different, can be used within an engineering alliance, proffering that an alliance is not a unitary organisation but a partnership between organisations. Aborisade (2008) further suggests that all employees engaged within the alliance, no matter their status, have vested interest in the success of the alliance outcomes. This suggests disconnection between individual organisations and engineering alliances, with respect to human resource management.

Whilst the extant literature appears to support the unitarist approach, the blending of cultures (Rahman and Korn, 2010) suggests a pluralist approach may be required. Whilst the human resource management approach is important to the success of an alliance (Lajara, 2003), the decision regarding a unitarist or pluralist approach is less so. Both approaches require the antecedents described

by Mohr and Spekeman (1994), referring to trust, interdependence, co-ordination and communication with the subtle differences purporting to be the variations (Aborisade, 2008) in the application of these antecedents. It is from the pluralist view and the problems of poor communication, cooperation and trust (Chan et al., 2007) that the best for project success outcomes can be summarised as;

> *'Trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994)'*

It should however be noted that the current literature cites problems with the measurement of the best for project success outcomes (Cravens et al., 2000) and the success they can deliver; employee engagement (Macleod and Clarke, 2009) is one method by which they can be measured.

2.3 Employee Engagement

2.3.1 What is Employee Engagement?

Kumar et al. (2011) examined employee engagement from its historical roots and concluded that there is no single agreed definition other than it is a multi-faceted construct (Kahn, 1990). According to Kumar et al. (2011), if there is no universal definition of employee engagement, then it cannot be managed, neither can it be measured to ascertain if improvements are needed, or if it working as intended. This suggests that this research is required to understand how to optimise engineering alliances through the development of an employee engagement model. However, there is a need to develop a universal definition of employee engagement for engineering alliances, such that the developed model will be aligned to a broader understanding of the term.

Existing literature by authors such as Kumar et al. (2011), Sundaray (2011) and Kular et al. (2008) suggests the work of Kahn (1990) is the seminal work in this field. This seminal work has been tested once by May et al. (2004), which was underpinned by the research of Lawler and Hall (1970). The research of Kahn (1990) and Lawler and Hall (1970) focuses on the psychology of the employee with Khan (1990) identifying that that meaningfulness, availability and

safety are significantly related to employee engagement. These conditions suggest a pluralist approach to employee engagement, recognising employees are individuals with differing needs and requirements, where as a unitarist approach would suggest that all employees would act the same, which is not what Kahn (1990) proposed. Indeed, the findings of Kahn (1990) propose manifestations of employee engagement, which in turn enables those concepts to be developed and tested further against the best for project success outcomes. Employee engagement has been in existence since 1970, and was rediscovered in 1990 and again in 2010 onwards with incremental steps towards the improvement of, or interpretation of the previous research; examples of this include the research of May et al. (2004). Literature suggests that employee engagement is a management fashion (Saks, 2006), yet the need for this research is not driven by management fashion, but through a focus to optimise engineering alliances to achieve superior project success (Taylor, 2005).

Kumar et al. (2011) describe employee engagement as a key business driver for organisational success that is influenced by many factors ranging from managerial styles, trust, respect and leadership for example. It is from the anchor of Kahn's (1990) research and Kumar et al.'s (2011) description of employee engagement that a universal description of employee engagement can be created to address the optimisation of employee engagement in engineering alliances. The creation of a universal description can be underpinned by praxis literature referring to employee engagement, which is often referred to as guidance (MacLeod and Clarke, 2009). It is from this starting point, the weaving of praxis and theory, that employee engagement can be defined.

Employee engagement has become a widely used term (Saks, 2006) and has been popular in the last five years with practitioners such as Macleod and Clarke (2009), Gennard and Judge (2010), and institutions such as the Chartered Institute of Personnel Development (2012). There is a convergence of opinion amongst these practitioners which suggests that employee engagement is 'a commitment to the organisation by its employees to go that extra mile, to look beyond job satisfaction and feel a sense of fairness and trust in doing so' (CIPD, 2012; Gennard and Judge, 2010; MacLeod and Clarke, 2009;

Clarke, 2012). This convergence describes a unitarist approach to employee engagement, proffering all employees working together for the good of the organisation. However, closer inspection suggests that it is a pluralist approach; with each employee identifying the level of 'extra mile' they are prepared to go. Yet the wider praxis view of employee engagement infers paucity in the theoretical frameworks and empirical research (Saks, 2006) through a one size fits all approach; suggesting employee engagement is a win-win for organisations and the workforce and framing employee engagement as 'not being rocket science' (Clarke, 2012). This notion of rocket science suggest that employee engagement should be developed from the perspective of the employee, leading to the election of Kahn's (1990) manifestations of employee engagement to form the basis of the model's development.

However, employee engagement does not have a singular definition according to Macleod and Clarke (2009), which is not dissimilar to current literature, which concludes that there is no singular agreed definition (Kumar et al., 2011). Macleod and Clarke (2009) cited over 50 different definitions of employee engagement, which suggests that employee engagement is not a single unitary construct (Robertson, 2012) and can be challenging (Gennard and Judge, 2010), suggesting the need to define employee engagement in an engineering alliance is important.

The challenge of defining employee engagement lends itself to employee engagement being a management fashion (Saks, 2006; Xu and Cooper-Thomas, 2011), in the sense that employee engagement appears to be the management tool of choice during difficult times, presenting the notion that all employees will pull together in the same direction; a unitarist approach. This assumption of pulling together in the same direction is underpinned by MacLeod and Clarke (2009), who suggest that employee engagement is a workplace approach that is designed to ensure that all employees are committed to the organisations goals and values, whilst the CIPD (2012) and Gennard and Judge (2010) also proffer a commitment to the organisation and its values. Current literature describes employee engagement as the employee being psychologically present when occupying and performing

a job role (Kahn, 1990) with the outcome being job satisfaction, motivation and involvement (Lawler and Hall, 1970) whilst being delivered by energy, involvement and efficacy (Maslach and Leiter, 2008). Xu and Cooper-Thomas (2011) suggest that employee engagement is the harnessing of employees to their jobs, physically, cognitively and emotionally, which is further underpinned by Sundaray (2011), who suggests that employee engagement is the level of commitment and involvement of an employee to its organisation.

Literature suggests a pluralist approach is generally adopted with the praxis literature adopting a more unitarist approach. The praxis approach is founded upon the concept that employee engagement is not a singular construct (Robertson, 2012) and the challenge that this presents (Gennard and Judge, 2010). The challenge relates to identifying a one size fits all approach to create a simplified construct of employee engagement. However, given the seminal work of Kahn (1990) and the confirmation of the three psychological conditions, a pluralist approach will be adopted leading to a generalised definition of employee engagement as:

> *'The level of commitment (CIPD, 2012; Gennard and Judge, 2010; Macleod and Clarke, 2009) and involvement of an employee to its organisation (Sundaray, 2011) with the employees demonstrating a passion for work that incorporates the cognitive, emotional and physical expressions (Kular et al., 2008) of meaningfulness, safety and availability (Kahn, 1990).'*

2.4 Employee Engagement Models

Current theory suggests there has been little contribution to the development of employee engagement models (Kumar et al., 2011; Kular et al., 2008; Saks, 2006). The paucity in the development of models can be attributed to the number of other constructs that employee engagement holds synergies with (Kumar et al., 2011). In particular, Kumar (2011) highlights the problem that employee engagement can be viewed as both an individual and group phenomenon which will have an impact upon the measurement of the best for project success factors of trust, interdependence, co-ordination and

communication (Mohr and Spekeman, 1994). There is paucity in the development of models related to employee engagement and the practitioner-researcher opted to use Kahn's (1990) employee engagement model because its research was developed within a professional services firm that holds close synergies with the contextual setting of this research. Kahn's (1990) model presents manifestations of positive engagement through the individual phenomena's of safety, availability and meaningfulness which needed to be extended through disengagement concepts, leadership concepts and the findings of praxis to form a more holistic employee engagement model that fuses the individual and group phenomena's associated with employee engagement, thus extending the employee engagement model of Kahn (1990). This section of the thesis explores this melding of concepts in order to further expand Kahn's (1990) model for use within engineering alliances.

Saks (2006) defines two strands of employee engagement models: positive and burnout. Table 2-1 depicts extant literature interpretation of Saks (2006) positive engagement and burnout.

Table 2-1: Positive Coupling of Positive and Negative Engagement

Positive Engagement (Kahn, 1990)	Burnout (Disengagement) (Maslach and Leiter, 2008)
Meaningfulness	Workload
	Control
Availability	Rewards
	Recognition
Safety	Community
	Fairness

Table 2-1 illustrates positive engagement through the seminal work of Kahn (1990), identifying three psychological conditions of meaningfulness, safety and availability. The model is built upon the psychology of the employee, suggesting that the employee has a psychological meaning to be in work, (i.e. a purpose), leading to feeling psychologically safe in their work, (i.e. have job security) and therefore psychologically make themselves available for work (i.e. perform the role). The antithesis to positive engagement is disengagement or burnout; the consideration of burnout will lead to a more holistic model being developed. Kahn (1990) describes disengagement as the opposite to positive

engagement. However, research by Maslach and Leiter (2008) suggests that disengagement is burnout, with Saks (2006) also describing burnout as an erosion of positive engagement and in particular the passion for work (Kular et al., 2008) will subside. This erosion is attributed to workload, control, rewards, recognition, community and fairness (Maslach and Leiter, 2008). Maslach and Leiter (2008) are suggesting that too much workload and control of the employee will lead to the erosion of meaningfulness, whilst unfair practice, demeaning values and a lack of community spirit will erode safety. The final erosion will seek a lack of reward and recognition, leading to the erosion of employee availability as they withdraw themselves from work (Khan, 1990). Yet these attributes can be defined as components of positive engagement if they are managed correctly by positively coupling meaningfulness with control and workload, safety with fairness, values and community and availability with recognition and reward. This is further underpinned by Xu and Cooper-Thomas (2011) who suggest that meaningfulness is influenced by challenge and autonomy with safety influenced by employee interactions with one another and availability influenced by self-confidence, shown in table 2-2.

Table 2-2: Incorporating Leadership Concepts

Positive Engagement (Kahn, 1990)	Burnout (Disengagement) (Maslach et al., 2008)	Leadership Concepts (Xu et al., 2011)
Meaningfulness	Workload Control	Challenge Autonomy
Availability	Rewards Recognition	Self Confidence
Safety	Community Fairness	Interactions

It is possible to build an employee engagement model based upon the conditions and positive coupling of Kahn (1990), Maslach and Leiter (2008) and Xu and Cooper-Thomas (2011) which can then be used to underpin the praxis literature, as depicted in table 2-3, shown on page 18. According to table 2-3, MacLeod and Clarke (2009) suggest leadership as a style by which employee engagement is delivered through engaging managers who treat their employees through empowerment and control. Gennard and Judge (2010) describe these traits as affective engagement, measuring the emotional attachment to the organisation. There is convergence through the positive coupling of meaningfulness

(Kahn, 1990) with control and workload (Maslach and Leiter, 2008) and challenge and autonomy (Xu and Cooper-Thomas, 2011). Macleod and Clarke (2009) describe employee voice as a strong sense of listening to and responding to employees. Gennard and Judge (2010) describe this as intellectual engagement, which refers to the extent to which employees are absorbed in their work. There is positive correlation through the positive coupling of availability (Khan, 1990) with recognition and reward (Maslach and Leiter, 2008) and self-confidence (Xu and Cooper-Thomas, 2011).

Table 2-3: Defining Employee Engagement With Praxis

Positive Engagement (Kahn, 1990)	Praxis View (Macleod et al., 2009)	Engagement Style (Gennard et al., 2010)
Meaningfulness	Leadership Style	Affective Engagement
Availability	Employee Voice	Intellectual Engagement
Safety	Integrity	Social Engagement

Table 2-3 shows that Macleod and Clarke (2009) suggest integrity is used to define the behaviour throughout the organisation that is consistent with the stated values of the organisation. Gennard and Judge (2010) describe this as social engagement, which defines the extent to which employees talk with one another, and it can be measured by the positive couplings of safety (Khan, 1990) with fairness and community (Maslach and Leiter, 2008) and the interactions they have with one another (Xu and Cooper-Thomas, 2011).

Table 2-4 summarises employee engagement through current and praxis literature and depicts an employee engagement model can be built for an engineering alliance. It is noticeable that the contributions of Gennard and Judge (2010) have been omitted and have not been used in this thesis. This is attributed to Gennard and Judge (2010) describing employee engagement but not defining the concepts of manifestation which are required to develop the employee engagement model.

Table 2-4: Summarising Employee Engagement

Positive Engagement (Kahn, 1990)	Burnout (Disengagement) (Maslach et al., 2008)	Leadership Concepts (Xu et al., 2011)	Praxis View (Macleod et al., 2009)
Meaningfulness	Workload Control	Challenge Autonomy	Leadership Style
Availability	Rewards Recognition	Self Confidence	Employee Voice
Safety	Community Fairness	Interactions	Integrity

2.5 Employee Engagement in an Engineering Alliance

2.5.1 Developing an Employee Engagement Model

The basis for the development of the employee engagement model starts with revisiting the definitions of an engineering alliance, best for project success outcomes and employee engagement. The model is then developed through the findings depicted in table 2-4, shown on page 19. This section of the thesis validates the choices made regarding the weaving of praxis and theory to build an employee engagement model for an engineering alliance, but is anchored by the three psychological conditions of meaningfulness, safety and availability (Kahn, 1990) and best for project success outcomes of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994).

2.5.2 Extending Meaningfulness

Meaningfulness is the mechanism by which employees actively seek meaning through their work (Kular et al., 2008), seeking to feel a positive emotional attachment to the engineering alliance through challenge and autonomy (Xu and Cooper-Thomas, 2011). If the positive emotional attachment is not achieved, employees are likely to leave the engineering alliance (Kular et al., 2008). The reasons given for leaving are as a lack of control over workload and feeling undervalued (Maslach and Leiter, 2008). This extension to meaningfulness can be used to measure the best for project success outcomes of 'trust and communication' between the employee and leader within an engineering alliance; focussing on the leadership style and the inter-actions between the employee and their co-workers or between the employee and their managers. It is underpinned by social exchange theory and the series of exchanges that need to be made to build relationships over time (Saks, 2006)

within the engineering alliance. The predominant exchange is trust (Bignoux, 2006; Lapierre, 1997) and given that an engineering alliance is a partnership between two or more organisations working closely together in an environment of trust and openness (Morwood et al., 2008), then the exchange of trust is founded upon a range of attributes such as dependability and credibility (Lamothe and Lamothe, 2011). Dependability defines the relationship between employees and their co-workers and/or the relationship between the employee and leader, lending itself to the leader-member exchange theory, whereby the style of the leader may determine the quality of the relationship (Schyns et al., 2012) and can be optimised through strong leadership (Macleod and Clarke, 2009; Xu and Cooper-Thomas, 2011) within the engineering alliance; however this thesis is not concerned with the quality of this relationship but it is concerned with leadership style.

Leadership is considered to be the practice by which employees are influenced to work together (Curtis and O'Connell, 2011) to achieve the best for project success outcomes of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994) that leads to organisations achieving their stated goals (Kale and Singh, 2009; Finlayson, 2011). Literature suggests that there are two types of leadership with respect to employee engagement; authentic and directive (Chiaburu et al., 2011).

Authentic leadership is also known as participatory leadership and was prevalent in the 1970s (Nazari and Emami, 2012), suggesting that authentic leadership is a management fashion that has been reinvented. This reinvention relates to authentic leaders exhibiting positive emotional attachment through challenge and autonomy (Xu and Cooper-Thomas, 2011). Authentic leaders use social exchange theory as the basis of leadership, choosing to create meaningful and honest relationships (Chiaburu et al., 2011) and the social exchange that is made is an environment that stimulates employees (George et al., 2007) through autonomy and challenge.

Directive leaders view themselves as hired hands, executing their job through a job description (Chiaburu et al., 2011), a style that is underpinned by transaction

cost economics as the basis for leadership. Within an alliance, a directive leader sets the goals and tells the employees how to achieve them because they believe the employees lack the motivation to achieve them by themselves, which is representative of motivation theory, and 'Taylorsim', which holds that people are workshy and lazy (Bassett-Jones and Lloyd, 2005). However, motivation is not under investigation within this thesis but there is recognition that this type of leadership does not lend itself to affective engagement for it demonstrates a lack of, or poor, employee engagement through the employees having a lack of control over workload and feeling undervalued (Maslach and Leiter, 2008).

Given that the best for project success outcomes are trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994) then authentic leadership can be viewed as the best leadership style to achieve these through the sharing of resources that requires the blending of two or more organisational cultures (Rahman and Korn, 2010; Herman et al., 2007). It can be argued that an authentic leadership style will transcend the cultural barriers through the creation of meaningful and honest relationships. These meaningful and honest relationships are built upon trust between individuals over time (Saks, 2006) through the empowerment of employees (Wellman, 2007) and are underpinned by the interpersonal exchanges described by social exchange theory.

The extension to meaningfulness is based around trust and authentic leadership, but there are barriers to achieving this: leaders not being aware; leaders not knowing; or leaders not believing in employee engagement (MacLeod and Clarke, 2009). These barriers are underpinned by the resource based view, which suggests sustainable competitive advantage can be achieved through the acquisition and control of human resources (Rungtusanatham et al., 2003); such that they are controlled to achieve efficiency and effectiveness (Andersen, 2010; Miller and Ross, 2003; Clardy, 2008) of the best for project outcomes regarding trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994). However, acquisition and control of resources is not under investigation within this thesis but the efficiency and effectiveness of resources is. This efficiency and effectiveness can be impacted upon by conflict. Langfred (2007a) suggests that conflict is the polar opposite of trust, and is

harmful to coordination and performance. Conflict can arise between employees in engineering alliances due to differences in organisational cultures (Jones et al., 2003); with culture being defined as the particular way in which a participant organisation structures its business processes, which can impact upon the best for project success outcomes of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994). Indeed, it can be argued that this is underpinned by transaction cost economics and is viewed as the trade-offs that need to be made during the lifecycle of the alliance. Conflict between leaders and employees is based upon a leader's expectation that employees will cooperate willingly (Sanders and Schyns, 2006). This is a limited view of conflict, there are other reasons for conflict namely uncertainty, inconsistency behaviours, focus, risk, performance (Hawkins and Little, 2011a:2011b) which can lead to the employee feeling a lack of control over workload and feeling undervalued (Maslach and Leiter, 2008), especially if the leadership style is directive. This will lead to the employee feeling a lack of challenge and autonomy is present in the relationship (Xu and Cooper-Thomas, 2011). It also suggests that the social exchanges are not positive in nature, inferring that the exchanges come in the form of instructions.

The extension to meaningfulness can be summarised as an authentic leadership style based upon trust with the ability to blend two or more organisational cultures to form an engineering alliance which recognises employees are individuals, who will at times, be in conflict with one another. The authentic leader will seek to build a meaningful relationship between themselves and employees, as well as between employees of differing organisational cultures.

2.5.3 Extending Safety

Safety is a psychological condition (Kahn, 1990) that defines the social engagement through which employees interact with one another (Xu and Cooper-Thomas, 2011). Safety is underpinned by the constructs of 'fairness', 'values' and 'community'; which, if not managed correctly, will lead to employee disengagement (Maslach and Leiter, 2008). These constructs are referred to as behavioural 'integrity', which is developed through' trust and values' (MacLeod and Clarke, 2009). This extension to safety can be used to

measure the best for project success outcomes of 'trust, interdependence, coordination and communication' within an engineering alliance.

The social community in an engineering alliance relates to the sharing of human resources (Chung et al., 2006; Johnston and Staughton, 2009; Luo and Deng, 2009), which holds close synergy with social exchange theory, defining the exchange as community spirit and values. The social community within an engineering alliance is broadly defined as a social network that contains a group of professionals who come together to exchange and build knowledge (Ropes, 2009) and this exchange of knowledge is considered to be organisations achieving their stated goals (Kale and Singh, 2009; Finlayson, 2011) as well as an exchange as described by social exchange theory.

Yet, an engineering alliance is not a single entity but a number of different organisations coming together through a social structure to facilitate human resource exchange (Coleman, 1988), which suggests that engineering alliances are embedded organisations in intricate webs of inter-organisational networks (Koka and Prescott, 2002) whose success relies on the goodwill of the employees to cooperate together (Adler and Kwon, 2002). This cooperation relies on the coordination of knowledge exchange to solve problems. Leaders of organisations suggest this cooperation is based upon social capital (Ropes, 2009); viewed as friendship and moral support (Adler and Kwon, 2002) through a social structure (Coleman, 1988) underpinned by social exchange theory; the exchange is now described as the structure by which employees interact and talk with one another (Gennard and Judge, 2010).

This social structure can be a hierarchical relationship between the employee and leader (Adler and Kwon, 2002) with the leadership style playing an important role. An authentic leadership style will seek to build the relationship through a shared understanding or meaning (Ropes, 2009) which is based on honesty and trust, and working towards the same goals, underpinning the relationship through social exchange theory, whereby the exchange is the generation of goodwill and favours. Similarly, employees will seek to build a social relationship between

themselves (Adler and Kwon, 2002), choosing to transcend the cultural barriers of different organisations through relationships based on favours (Adler and Kwon, 2002) whereby employees choose to help each other out in times of need.

The social structure and the best for project success outcomes of interdependence, co-ordination and communication (Mohr and Spekeman, 1994) are all based upon trust (Mohr and Spekeman, 1994; Ropes, 2009). Trust in the sense of safety relates to faithfulness and whether the actions of the authentic leader will be followed up, or whether fellow employees will return the favour in the future; faithfulness requires a degree of fairness to be present within the relationship. Fairness is seen to create value by removing fears of exploitation (Luo, 2008) within the relationship and is underpinned by social exchange theory, whereby if fairness is not present then the exchange of commitment and involvement of an employee to the organisation (Sundaray, 2011) cannot be easily determined. This lack of clarity in determining fairness leads to blame (Arino and Ring, 2010; Tan and Ching, 2012), resulting in conflict between employees that sees favours being withdrawn due to a lack of trust regarding the fairness of the exchange, suggesting that the social exchange is not positive. This lack of trust is a failure in terms of achieving the best for project success outcomes of Mohr and Spekeman (1994), but it can be controlled by engaging in positive communication, as well as the coordination of knowledge exchange and the creation of a social community. Similarly, if there is no perceived fairness in the relationship between leaders and employees, then the leader's expectation that employees will cooperate willingly (Sanders and Schyns, 2006) will be diminished by the employees' perception that there is no ethical behaviour, in the form of integrity, being demonstrated by the leader (Arino and Ring, 2010).

Integrity is the basic form of principles and values (Davis and Rothstein, 2006) and an alignment of employees and leaders' words and deeds (Fritz et al., 2013). With respect to safety, integrity is the psychological condition that refers to the perception of an agreement between a leader and an employee (Davis and Rothstein, 2006) and it is underpinned by social exchange theory in the sense that principles and values underpin any type of exchange that is to be

made. This agreement is built upon two constructs: trust and credibility (Davis and Rothstein, 2006) with the trust construct relating to what has happened in the past and what is likely to happen in the future (Fritz et al., 2013), based upon reliability and credibility (Davis and Rothstein, 2006) with the credibility construct based upon an assessment of relevant knowledge (Prottas, 2013). Integrity is also a trait of authentic leadership, in the sense that credibility can be viewed as a by-product of the creation of honest and meaningful relationships.

The extension to safety can be summarised as a relationship with a high degree of honesty that is built upon what has happened in the past and what will happen in the future. It is related to authentic leadership through an authentic leader being seen to follow through words with actions, which will foster trust with the employees. Authentic leaders create an environment of social engagement called a community that is underpinned by social exchange theory. The exchange in this environment will not be an exchange of resources, but an exchange of community spirit and knowledge, with a desire to transcend cultural barriers for the good of the engineering alliance.

2.5.4 Extending Availability

Availability is the psychological condition (Kahn, 1990) that defines the self-confidence of the employee (Xu and Cooper-Thomas, 2011) to the extent that they make themselves available for work through their absorption in their work (Gennard and Judge, 2010). This absorption in their work is underpinned by the constructs of 'recognition and reward' (Maslach and Leiter, 2008). These constructs are demonstrated through employee voice (MacLeod and Clarke, 2009) where the views of the employees are sought and listened to (MacLeod and Clarke, 2009). This extension to safety can be used to measure the best for project success outcomes of 'trust and communication' within an engineering alliance.

Employee voice encourages challenge (MacLeod and Clarke, 2009) regarding the performance of the employees and how things can be improved (Gennard and Judge, 2010), with employees offering intellectual capital to the organisation (Cardoso, et al., 2010).

Intellectual capital has a number of definitions within the extant literature (Koszewski, 2009). It is often referred to as knowledge capital and described as an intangible asset (Razzaq et al., 2013) and has two main constructs: human capital and relational capital (Razzaq et al., 2013; Mládková, 2013). Human capital describes employees' level of knowledge and experience (Mládková, 2013). The level of knowledge and experience can be demonstrated by the employee through definitions of their work being complex (Cardoso et al., 2010) which can be used to demonstrate the employees' absorption in their work (Gennard and Judge, 2010). Relational capital is the development of internal relations between employees (Razzaq et al., 2013; Mládková, 2013) within the engineering alliance and as such, demonstrates a sense of interdependence amongst the alliance community. Koszewski (2009) describes intellectual capital as a social collective within an organisation or intellectual community. Intellectual capital is not under investigation within this thesis.

It can however be argued that an alliance is an intellectual community underpinned by social exchange theory, with the exchange relating to how knowledge is exchanged, referring to the management, creation, sharing and distributing of knowledge (Salleh and Huang, 2011). However, in order for intellectual capital to be successfully shared, it must be both recognised and rewarded.

Employee reward and recognition is viewed as a component of meaningful work (Brun and Dugas, 2008). A lack of recognition of employees' efforts can lead to emotional distress in the organisation (Brun and Dugas, 2008), which in turn undermines the extent to which employees make themselves available for work (Gennard and Judge, 2010) through a diminished self-confidence (Xu and Cooper-Thomas, 2011). This lack of availability can lead to a de-motivated employee (Brun and Dugas, 2008). Motivation is seen as a management tool that promotes and encourages employees to increase their effectiveness within the organisation (Manzoor, 2012) and has two levels: intrinsic and extrinsic (Salie and Schlechter, 2012). Intrinsic motivation refers to the recognition concept of motivation, generated by employees through pride, self-actualisation and a desire to grow (Salie and Schlechter, 2012) whilst

extrinsic motivation is the reward concept of motivation, which can include pay, praise or promotion (Salie and Schlechter, 2012). Whilst motivation is not under investigation within this thesis, it is important to recognise that social exchange is present through the trading of intellectual capital with intended outcome to be either intrinsic or extrinsic, termed as a reward.

In rewarding employees' efforts, it is viewed by the employee as a reward for imparting the intellectual capital to enable the company to achieve successful project outcomes. According to Danish (2010) reward and recognition leads to the achievement of successful project outcomes, but there is cognisance of employee motivation being the key to the success. Manzoor (2012) complements Danish's (2010) view by noting a motivated employee recognises the project success outcomes and will understand what is needed to achieve them, which suggests positive interdependence between the leader and the employee. This suggests the employees believe that their availability, demonstrated through their performance, will be honoured (Branch, 2011). The concept of honour is a 'two-way street'; the organisation believes that the employee will, through their availability, demonstrate the core values of the organisation (Branch, 2011) and in turn, will deliver the project success outcomes, this two-way street being symptomatic of social exchange theory. Danish (2010) argues that in order to achieve this concept of honour, employees need to be satisfied and committed; satisfaction is the reward that is received for the commitment shown to the organisation, i.e. the recognition and this is the exchange.

Bishop (1986) proffers a different view on reward and recognition, highlighting that employees may not be able to make themselves available for work for different reasons than those associated directly with motivation. Bishop (1986) argues that the length of service and the intellectual capital acquired, particularly intellectual capital concerned with the organisation itself, rather than job roles, is of significant importance with rewards associated with long term contracts, which engineering alliances can typically offer. Bishop (1986) holds that in order to retain the intellectual capital for the duration of the alliance, a new contract needs to be drawn up to reflect reward and recognition based on milestones,

suggesting a different type of exchange under social exchange theory. If motivation is perceived to formulate successful project outcomes (Manzoor, 2012) then motivation needs to be monitored, gauging satisfaction through employee voice can do this.

Employee voice is a concept that involves employees in the decision making processes of the organisation (Marginson et al., 2010; McCabe and Lewin, 1992). It is a 'two-way' communication process between the management and employees (Marginson et al., 2010) and in the past has been referred to as participative management (McCabe and Lewin, 1992). There is much discourse surrounding employee voice and the benefit that it can deliver to an organisation (Avery et al., 2012; McClean et al., 2013). The perception of dis-benefit relates to a lack of trust between employees and management (Morrison, 2011) with employees offering discretionary expression of comments (McClean et al., 2013), suggesting that there are little or no exchanges present through social exchange theory. The discretion is reserved for fear of it not being safe to speak up (Detert & Burris, 2007) because the management may choose to hear employee words as non-constructive (Avery et al., 2012). Non-constructive words can relate to dissatisfaction with current status quo (Burris et al., 2012; McClean et al., 2013) of the alliance or an opportunity for improving their own well-being (Detert & Burris, 2007) within the alliance. Yet, management view employee voice as critical to organisational performance (Morrison, 2011) and try to create the right environment to support employee voice (Avery et al., 2012), inferring that the right levels and types of exchanges need to be made under social exchange theory. Furthermore, there is a tacit under-pinning through principal-agent theory, whereby the communication flow is 'one-way' and usually through the form of instructions.

The creation of the right environment is borne from managers attempting to engage in deeper conversations with employees (Avery et al., 2012) to acquire honest input that can lead to good decisions being made (Morrison, 2011) that can relate to achieving the successful outcomes of the project. However, the managerial view remains tempered by the imprecision of worker participation and employee voice (Holland et al., 2011) with managers' perceptions of

leadership and the need to include employees fully in decision making (Farndale et al., 2011), suggesting interdependence is controlled by the leadership style. This in turn suggests concepts of principal-agent theory and how the communications are made; be it a two-way or one-way process.

The extension to availability can be summarised by the development of intellectual capital that can be freely exchanged within the alliance. The extent to which the employees will freely exchange knowledge is governed by reward and recognition that is administered by the leader. An authentic leader recognises reward and recognition is a cyclical event that can be built upon trust and the right environment by which the employee's voice can be heard.

2.5.5 Incorporating Organisational Commitment

Engineering alliances are not a singular construct, they consist of two or more organisations; it is from this perspective that a fourth concept will need to be considered. This fourth concept is not a psychological condition per se, but an understanding of organisational commitment. According to Scholl (1981) organisational commitment is a series of behaviours that identify with the employee recognising the goals and missions of the organisation and the ability for the employee to remain within the organisation for the long term. Organisational commitment embodies the three psychological conditions of Kahn (1990) and it can be argued that organisational commitment is a merging of three conditions; the argument being underpinned through systems thinking and the need to address the three psychological conditions in the contextual setting.

Systems' thinking is a concept that assesses inter-relationships from the human perspective (Jambekar, 1995). It can be linked to established theories (Ballé and Jones, 1995) to determine the relationship of employee engagement within an engineering alliance, such that the 'best for project success outcomes' (Mohr and Spekeman, 1994) are determined. Systems thinking is a way in which we can view the world (Jambekar, 1995: Conti, 2006) and holds close synergies with social construction, the practice by which we construct the world and ourselves (Liebrucks, 2001) through holistic thinking (Rosi and Mulej, 2006) to

furnish a true account of the world (Nightingale and Cromby, 2002). This reference to the 'world' refers to the alliance but the alliance termed as a community led by authentic leaders who openly encourage employee voice. It also refers to the participating organisations and how they interact with one another. This is underpinned by game theory (Parkhe, 1993) in the sense that organisations will continue to work together harmoniously, so long as the stated goals and objectives (Kale and Singh, 2009; Finlayson, 2011) of profit and turnover (Judge and Dooley, 2005) are being achieved. If they are not, then one or more of the organisations may try to cheat one another by 'acquiring' work at another participating organisations expense. In doing this, authentic leadership styles are considered not to be present, which means the community will not be authentic and employee voice will be diminished. In order to address game theory, systems thinking is needed to consider the holistic picture of people and organisations.

Systems thinking is considered to be the adoption of a logical thinking style (Ballé and Jones, 1995) that can be used to solve the chronic problem (Jambekar, 1995) of the relationship between an organisation and its employees' within an engineering alliance. This chronic problem relates to a cause and effect relationship that will change over a period of time (Jambekar, 1995; Ballé and Jones, 1995; Sheffield et al., 2012) within the engineering alliance. An engineering alliance is a complex project, with interactions occurring at both organisational and personal levels, which can be represented as closed loop thinking, which recognises that cause and effect are not linear relationships. The non-linearity of the relationship represents the changing requirements of an employee or an organisation over time.

These changing requirements, with respect to employee engagement, may lead to the establishment of an accelerated career path, based on the idea that roles are project related and not organisational related; job security based upon the longevity of the alliance, which other contracts may not be able to offer; or they can be an enhanced salary based on the concept that alliances are cash cows and that the participant organisation will pay an enhanced salary for employees' skills. The accelerated career path and job security are often perceived as

acceptable outcomes for both the employee and participant organisation, with the employees aligning to participant organisations goals for project success with an enhanced salary, an additional outcome for the employee at the cost of the participant organisation.

However, Rogers and Bozeman (2001) suggest that an accelerated career path that leads to enhanced salary does not necessarily drive behaviours; learning also plays a key concept. In addition to learning, Rogers and Bozeman (2001) suggest that career path combined with personal traits, underpinned in this case by Kahn (1990) and the three psychological conditions are the motivating factors for the development of knowledge through learning; an embodiment that a systems thinking approach is present within alliances through the interactional relationships. This is further underpinned by Bresnan and Marshall (2002), who suggest that alliances move away from adversarial ways of working and towards the development of relationships based upon co-operation. In essence they are stating that employees need to understand the organisational role within the alliance through a change of culture; that relates to the blending of employees from two or more organisational cultures (Rahman and Korn, 2010) to form a singular project team.

Organisational commitment can be summarised as recognition that the employee understands the goals and mission of the alliance and each of its partners. It is an embodiment of the three extended psychological conditions of safety, availability and meaningfulness that is underpinned though systems thinking. It is also recognition that career paths and learning are significant. However, the success of organisational commitment is based upon inter-relationships and employee behaviours.

2.6 Literature Review Conclusion

2.6.1 Critical Rationale of Theory

According to Kahn (1990) employee engagement is a multi-faceted concept lending itself to requiring a number of underpinning theories. Kahn's (1990) model provides the seminal starting point from which the theoretical underpinning can be built. This concept is founded upon positive engagement

through the three psychological conditions of meaningfulness, safety and availability. Kahn's (1990) model was considered to be acceptable to take forward because of its close synergies with contextual setting of the research and its North American cultural approach was over come through the weaving of Macleod and Clarke (2009) and their study on behalf of the Government of the United Kingdom. However, the extension of Kahn's (1990) model through the work of Maslach and Leiter (2008), Xu and Cooper-Thomas (2011), MacLeod and Clarke (2009) yields further theories that should be taken forward.

Principal-Agent theory was adopted because it can be applied where one party [the principal] delegates authority to another party [the agent] (Fayezi et al., 2012; Mitchell and Meacham, 2011) and addresses the autonomy and challenge (Maslach and Leiter, 2008) and leadership (Xu and Cooper- Thomas, 2011) concepts further addressing the cognitive, emotional and physical expressions (Kular et al., 2008) of employees. This theory was used in the research because it helped to explain the types of leadership style that were present in the engineering alliance, based on exchanges between the leaders and members of the alliance, leading to the inclusion of social exchange theory.

Social exchange theory examines the interpersonal exchanges, as opposed to the economic exchanges (Bignoux, 2006; Rahman and Korn, 2010; Rosenbaum, 2009), relating to the level of commitment an employee has to the organisation (Sundaray, 2011). This level of commitment is underpinned by the motivation of the returns they bring from others (Bignoux, 2006; Paille, 2009) suggesting that the exchange is a human-to-human relationship based upon the concept of trust (Bignoux, 2006; Lapierre, 1997). In summary, social exchange theory was taken forward because it plays an important role in employee engagement enabling an explanation of why employees choose to engage with the organisation (Saks, 2006).

Game theory (Parkhe, 1993) was used to address organisations operating within the engineering alliance to support the evidencing of trust, co-ordinate and communicate and interdependence with one another. This enabled an

understanding of one another's roles and the management of the cultural barriers (Rahman and Korn, 2010) that exist.

An engineering alliance is a human centred construct (Pansiri, 2005) with established congruence across a number of established theories. Transaction cost economics is considered to be present and postulates a mandatory exchange of human resources, governed by a contract that occurs on the open market (Rahman and Korn, 2010; Bignoux, 2006). Transaction cost economics was adopted within the research because it is concerned with mandatory exchanges and any other associated trade-offs that may be required to secure the human resources; this may anecdotally include concepts of training, financial reward, promotion and such like.

The four supporting theories of transaction cost-economics, principal agent theory, social exchange theory and game theory are brought together through a fifth theory of Systems Thinking (Jambekar, 1995). Systems thinking identified the concepts of employee engagement and organisational commitment are interlinked and not developed in isolation. The practitioner-researcher has chosen to readily accept these theories rather than challenge them; this is based on the notion that these concepts provide underpinning support to the development of an employee engagement model rather than them becoming modified or extended individually as part of the model's development.

2.6.2 Critical Rationale of Literature

This literature review concludes that Kahn's (1990) employee engagement model of meaningfulness, availability and safety is extended with the concepts identified by Maslach and Leiter (2008), Xu and Cooper-Thomas (2011) with organisational commitment of Scholl (1981) and the praxis view of Macleod and Clarke (2009) can lead to the development an employee engagement model for an engineering alliance.

Kahn's (1990) original employee engagement model presents manifestations of positive engagement through the individual phenomena's of safety, availability and meaningfulness. In order to develop an employee engagement model for

use within engineering alliances, Kahn's (1990) mode was extended through the disengagement concepts identified by Maslach and Leiter (2008), leadership concepts (Xu and Cooper-Thomas, 2011) and the findings of praxis (Macleod and Clarke, 2009) to form a more holistic employee engagement model that fuses the individual and group phenomena's associated with employee engagement, thus extending the employee engagement model of Kahn (1990). This holistic view is representative of a systems thinking approach (Jambekar, 1995) as the model has been extended to observe additional concepts inasmuch as the model did not purely focus on the positive concepts of engagement.

Maslach and Leiter's (2008) disengagement concepts of control, workload, recognition, reward, fairness and community have been accepted for inclusion in the model because literature suggests that these concepts have been proven to exist. The literature review suggests that leadership concepts also exist within employee engagement and they have been represented in the proposed model through the concepts of challenge, autonomy, self-confidence and interactions (Xu and Cooper-Thomas, 2011). These concepts were chosen because they represented the effects that leadership style could have upon the employees of the alliance. These extensions to Kahn's (1990) model have been further melded with praxis contributions within the United Kingdom using concepts of leadership style, employee vice and integrity (Macleod and Clarke, 2009).

Given the paucity in the literature relating to industry best practice and more importantly the confusion within the literature, these components were chosen to supplement the literature and represent industry best practice. Kahn's (1990) model is further extended to incorporate the employee engagement concepts of organisational commitment, recognising that alliances are human centred constructs (Pansiri, 2005) through the incorporation of Scholl's (1981) organisational commitment to reflect this, i.e. organisational commitment was chosen to represent the organisations role within the engineering alliance but recognising that organisations are constructed from people. A summary of these extensions is shown overleaf and taken forward in this thesis;

1. Meaningfulness (Kahn, 1990) can be positively coupled with leadership style (Macleod and Clarke, 2009), the concept of control and workload (Maslach and Leiter, 2008) and the challenge and autonomy (Xu and Cooper-Thomas, 2011).

2. Availability (Kahn, 1990) can be positively coupled with employee voice (MacLeod and Clarke, 2009), the concept of recognition and reward (Maslach and Leiter, 2008) and self-confidence (Xu and Cooper-Thomas, 2011).

3. Safety (Kahn, 1990), can be positively coupled with integrity (Macleod and Clarke, 2009) fairness and community (Maslach and Leiter, 2008) and the interactions with one another (Xu and Cooper-Thomas, 2011).

4. Organisational commitment (Scholl, 1981), can be positively coupled with employee behaviours (Scholl, 1981) and the inter-relationships from the human perspective (Jambekar, 1995) that form the three psychological conditions (Kahn, 1990), leading to enhanced learning and career paths through a better understanding of the engineering alliance and its constituent partners' roles.

3 <u>Methodology</u>

This chapter builds on the literature review's development of the four concepts of the employee engagement model for use within engineering alliances. It establishes the research question to be answered, the aims and objectives of this research, the philosophical position of the practitioner-researcher, the choice and justification of the methods applied and the development of the conceptual research model. The conceptual research model outlines the choices made regarding the design of the research instruments and determines the process by which grounded theory, coding of data and triangulation of findings that controls for researcher biases, thus underpinning the development of a collaborative model that optimises employee engagement in an engineering alliance and evidencing achieved project outcomes.

3.1 Research Question

The research began with the identification of a research question linking to a problem and a goal (Jonker and Pennink, 2009) whereby the following research question was developed;

> *"How can organisations operating in an engineering alliance optimise employee engagement so that best for project success outcomes are achieved?"*

The problem set within the research question was to determine how to optimise employee engagement within an engineering alliance. The use of the term 'engineering alliance' contextualised the research and narrowed its breadth. The use of the term employee engagement offered an approach to evaluate and analyse the problem set within the question that led to the goal of evidencing 'best for project success outcomes'.

3.2 Research Aim and Objectives

3.2.1 Aim

This thesis addresses a gap in knowledge regarding the development of an employee engagement model within an engineering alliance. The aim of this

thesis was to re-affirm the research question with a goal in its theoretical concept as follows:

"To develop a collaborative model that optimises employee engagement in an engineering alliance, evidencing achieved project outcomes."

3.2.2 Objectives

The research objectives were developed as a high-level roadmap, stating what needed to be accomplished with a probable result (Jonker and Pennink, 2009), such that the research question is answered. The objectives outlined to the aim of this thesis are given as:

1) To identify and justify the main theories associated with this thesis, including systems thinking, social exchange theory, game theory, cost transaction economics and principal-agent theory;

2) To critically analyse and review the current literature pertaining to employee engagement, engineering alliances and best for project success outcomes;

3) To compare and contrast three case studies, examining and determining the factors that determine best for project success factors, based upon the developed employee engagement model;

4) To evaluate and review the effectiveness of the developed employee engagement model in an alliancing environment;

5) To refine the employee engagement model such that it can be made commercially available for future alliance contracts.

3.3 Research Philosophy & Approach

3.3.1 Branches

The choice of research philosophy for this thesis was underpinned by the development and nature of knowledge (Saunders et al., 2009). The philosophical, debate was not considered to be simply about 'choosing the right options' for the research design but concerned itself with understanding the way in which the research design and the research itself, as presented in this thesis, were approached. It is through considering these options as assumptions that the concept of justification can then be presented within this thesis, beginning with ontological and epistemological perspectives.

Ontology concerns the nature of reality and existence (Easterby-Smith et al., 2012; Jonker and Pennink, 2009; Saunders et al., 2009) with the assumption being an interpretation on the way the world works. This interpretation is defined as acting within the world with limited knowledge (Jonker and Pennink, 2009), with social actors being concerned with their existence (Saunders et al., 2009). These definitions relate to the research question, the limited knowledge being an understanding of outcomes and the social actors referring to both the participant organisation and the employee, further supported by defining knowledge as being in the possession of people and interactions, with the interactions being the way in knowledge can be demonstrated and enhanced (Jonker and Pennink, 2009).

Epistemology constitutes what is acceptable knowledge (Saunders et al., 2009) and enquires into the nature of the world (Easterby-Smith et al., 2012). It is concerned with the methods, validity, nature, sources, limits and scope of the research and distinguishes belief from opinion (Jonker and Pennink, 2009). In relation to this thesis, the epistemological viewpoint was the justification and robustness of the research design and how that demonstrated a contribution to knowledge. Epistemology is not mutually exclusive from ontology, the two combined throughout the research, with the assumptions made at the ontological viewpoint underpinned by an epistemological viewpoint.

3.3.2 Philosophy

There are four common philosophical approaches to developing research; positivism, realism, interpretivism and pragmatism. A review of the literature regarding research design was performed to assess the philosophical stance applicable to both ontology and epistemology as depicted in table 3-1, enabling the practitioner-researcher to gain an appreciation of the philosophical stances.

Table 3-1: Comparing the Philosophies in Relation to the Research Question

	Positivism	**Realism**	**Interpretivism**	**Pragmatism**
Ontology	The positivist approach measures through objective methods with a need for the observer to be independent of the subject being observed (Amaratunga & Baldry, 2001).	The realism approach appreciates the different constructions and meaning people place upon their own experiences and the reasons for those differences (Amaratunga & Baldry, 2001).	Interpretive methods of research adopt the position that our knowledge of reality is a social construction by human actors. In this view, value free data cannot be obtained since the enquirer uses his or her own preconceptions in order to guide the process of enquiry and furthermore the researcher interacts with the human subjects of the enquiry, changing the perceptions of both parties (Walsham, 1995).	Pragmatism suggests that the research question is the most important element of research (Saunders, et al., 2009).
Epistemology	Positivists have a technical interest in taking over the social environment and use empirical and analytical methods based on instrumental reason (Ozanne & Saatciolugu, 2008)	Realists share the belief that the world exists independently of our knowledge of it. Realists contextualise knowledge in many ways, in essence data is created and interpreted in terms of a variety of theories and theoretical commitments (Kovacs & Spens, 2007)	Interpretivists do not seek the truth, but variety (Kovacs & Spens, 2007).	Pragmatists distance themselves from the endless theoretical debates about truth and reality (Saunders, et al., 2009).

At first glance of table 3-1, it would appear that the interpretivist approach would be most relevant to the main research question, given the human interactions and the manner in which knowledge is demonstrated whilst positivism is not considered relevant because of the practitioner-researcher's desire to contribute to the research, thus rendering independence null. This also suggests that realism is not relevant as a middle ground, but given the practitioner-researchers involvement in the research, pragmatism was considered, given the importance of the research question, but rejected on the basis that the practitioner-researcher felt that human interaction was as equally important as the research question itself. However, an interpretivist approach was adopted due to the researcher interacting with the human subjects of the enquiry (Walsham, 1995). The epistemological perspective depicts positivists as wanting to control the social environment with interpretivists' seeking to determine truth and variety, with the latter lending itself to the practitioner-researcher's approach to the research. It is from the position that an interpretivist philosophy was undertaken.

3.3.3 Approach

There were three types of approach that could have been adopted: deduction, abduction and induction. Deduction involved the testing of a theory (Saunders, et al., 2009), which in turn suggests the early identification of an established theory (Kovacs and Spens, 2007). This suggested a top down approach that eventually narrows the research question into a series of hypotheses to test. This in turn suggests that a deductive approach will not generate any new theories and given its logical nature and reliance on an existing theory, it is considered a positivist philosophy (Kovacs and Spens, 2007). Given that the research question identifies employee engagement as a measurement tool to evidence the best for project success factors, the purpose of the research is not to test a theory but to create one, leading to choosing induction or abduction. Abduction is concerned with seeking the relative truth, suggesting something maybe. The approach here suggested a new theory or framework to be applied to already existing observations and may borrow other theories from other disciplines (Kovacs and Spens, 2007), such as systems thinking. However, the research question aims to prove that employee engagement can be used rather than definitively suggesting it can be used.

Furthermore, the practitioner-researcher is adopting a pragmatist philosophy, which is less concerned with truth and it because of this that abduction was not considered, leaving induction as the only remaining choice.

Induction is concerned with the context in which events are taking place and builds a theory. It is concerned with gaining an understanding of the meaning humans attach to events and a realisation that the practitioner-researcher is part of the research process (Saunders et al., 2009). This approach is aligned with the research question because the investigation concerns both employees' and organisations' motivations and the research practitioner's desire to be part of the research, i.e. the interpretivist's philosophical approach.

Furthermore, the interpretivist approach is a bottom up approach, looking to build theory from empirical observations through to theoretical advances, although it has been criticised for not generating new theories (Kovacs and Spens, 2007). The practitioner-researcher considered this to be flawed, as the contribution to knowledge for any research project can be the beginning of a new theory that other practitioner-researchers can go on to test, develop and build.

3.4   The Methodological Debate

3.4.1   Strategic Options

The strategic options were chosen by utilising the three classifications of purpose: exploratory, descriptive and explanatory (Saunders et al., 2009). Exploratory research aims to find out what is happening whilst descriptive research aims portray events and explanatory research establishes the causal relationships between variables. The research question was written to establish the relationship between employees and organisation's engagement, thus describing an explanatory research project.

This thesis identifies that that there are a number of research strategies that could be employed; some are linked to induction whilst others are considered deductive (Yin, 2009). Given the interpretive philosophy and the inductive approach, it was considered important to fully explore the strategic options to

ensure that the research question was answered fully. Figure 3-1 shows the options that were available, with further discourse offered regarding the options that were dismissed and accepted.

Source: Saunders, M. & Lewis, P & Thornhill, A. (2009) Research Methods for Business Students, *Pearson Education Limited*, Ed 5, Chap 4, pp108
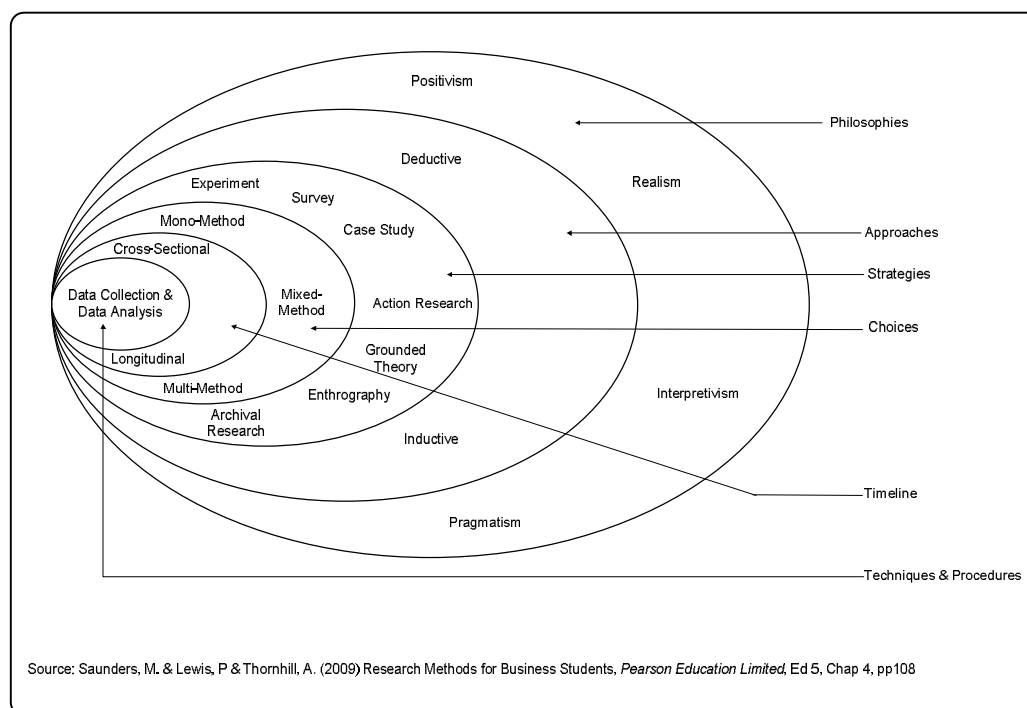
Figure 3-1: The Research Onion

3.4.2 *Dismissed and Accepted Options*

The strategic choices of figure 3-1 were assessed and either dismissed or accepted for this thesis. The following commentary depicts the discourse and justifies the decisions that were made.

An experiment can be used to study the causal links between relationships (Saunders et al., 2009) but this requires theoretical hypotheses to be generated and given that this is an inductive approach, there are no hypotheses and therefore an experiment will not be chosen. Similarly, a survey was not chosen for the same reason. Whilst a survey could have been used, it was decided that it would not clearly establish the causal relationships and bias could devalue the output of the research.

Archival research was dismissed because there are no administrative records and documents to be researched. The research was not contextualised as being

'in-action' with little focus on the past; nor is the research focussed on changes over time. Action research was also dismissed, given that it attempts to create knowledge about an organisation whilst trying to change it (Ozanne and Saatciolugu, 2008) and this research is concerned with understanding the causal relationships and changing them for the future.

An ethnographical option was elected as it enabled the practitioner-researcher to describe and explain the social world that the research subjects live in (Saunders et al., 2009). This related to the research question, with the social world represented by the engineering alliance and the subjects relates to both the employee and the participant organisations. This option enabled the practitioner-researcher to participate in the research through ethnography. Whilst this presents practitioner-researcher bias, there was also a risk of population bias, given that the sample population was known and supportive of the research. However, this was overcome by using a case study approach, which is commonly used with ethnography (Venkatesh et al., 2013) to clarify the data collected throughout the research, identify and remove bias from data collection techniques.

A case study is an empirical inquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomenon and context are not clearly evident (Woodside, 2003; Saunders et al., 2009); typically combining data collection methods such as interviews, questionnaires and observations (Eisenhardt, 1989) to provide multiple sources of evidence (Saunders et al., 2009) that can be used to address the issue of bias. Given the inductive approach to the research, a case study was used to develop theories and concepts (Gibbert et al., 2008) and to build a subject foundation (Reddy and Agrawal, 2012). This subject foundation was constructed using grounded theory (Glaser and Strauss, 1967; Strauss and Corbin, 1990; Dey, 1999; Fendt and Sachs, 2008; Zarif, 2012) and explanation building through emergent properties, enabling replication to be documented repeatability across cases studies and multiple data collection techniques. Grounded theory is a systematic, inductive approach to developing theory to help understand complex social processes (Ng and Hase, 2008; Saunders et al.,

2009); i.e. the causal relationships regarding employee engagement and does not follow a linear path of research progression (Ng and Hase, 2008; Dunne, 2011) but follows an innovative methodology, facilitating the discovery of theory from data (Dunne, 2011).

3.4.3 Method

Current literature yielded that there were two data types that could be collected; quantitative and qualitative. Quantitative data is sourced through questionnaires or graphs/statistics and generates numerical data (Saunders et al., 2009) and can be used to test specific relationships between variables (Frels and Onwuegbuzie, 2013). Qualitative data is collected through interviews (Saunders et al., 2009) and case studies (Woodside, 2003) to generate non numerical data which requires a clear chain of evidence and a thorough description of the research process employed (Nuttall et al., 2011), with the clear chain of evidence archived used grounded theory. Qualitative research uncovers experience, processes and causal mechanisms through its unconventional methods and quantitative research calibrates the findings to generalize to a larger population (Bluhm et al., 2011), which suggests that the choice made about which data will be collected is dependent upon the method chosen. Both qualitative and quantitative data collection techniques can be used within three types of methods: mixed method, multi method and mono method.

The mono-method is a single data collection technique with a corresponding analysis procedure (Saunders et al., 2009). Given the research question concerns, the optimisation of employee engagement, the mono-method appears to constrain the research to the evidencing of best for project success outcomes via one method and the subsequent reliability of the data, with respect to the quality of the contribution to knowledge. The mixed method approach is where data collection is both quantitative and qualitative as well as the analysis procedure (Saunders et al., 2009). It uses both qualitative and quantitative research methods (Venkatesh et al., 2013) but does not combine them. This method was discounted because the worldview adopted by the practitioner-researcher was qualitative in nature but there was a desire to make use of quantitative data to inform the data collection of qualitative data.

The multi method approach uses more than one data collection technique and analysis procedure to answer the research question (Saunders et al., 2009; Venkatesh et al., 2013). A multi method approach refers to a combination where more than one data collection technique is used with associated analyses techniques, but this is restricted to a qualitative or quantitative world-view (Saunders et al., 2009; Venkatesh et al., 2013). The multi-method approach was chosen because the research required a mixture of qualitative and quantitative data to provide reliable output data to answer the research question and make a contribution to knowledge. It also combines with grounded theory and the two data collections types and analysis procedures compliment the notion of developing theory as the research progresses. In addition to this, Bryman (2006) suggests that there are no real guidelines in deciding how, when and why research methods can be combined, so additional justification was required to underpin the multi-method approach, based upon the typologies of Bryman (2006).

This research project uses qualitative and quantitative data collection and analyses but it does not use them simultaneously; the use of quantitative data informs the qualitative data collection techniques and is therefore sequential in nature which is a choice selection (Bryman, 2006; Morgan, 1998; Morse, 1991). Both Morgan (1998) and Morse (1991) describe the need to identify which data has priority, which for the purpose of this research project was chosen to be qualitative. Quantitative data was used to determine common themes and trends that needed to be explored further through interviews. The data from the interviews was then used to inform the observation criteria. At no stage in this research were quantitative tools and techniques used, only descriptive statistics were developed and the final analysis and conclusions were in narrative form; it is from this perspective that qualitative data has priority.

According to Creswell and Plano-Clark (2011) it is important to identify the method of data integration and triangulation that was chosen to integrate the data. Triangulation was based upon the seminal work of Jick (1979) with support from coding techniques described by Saldana (2009). Tashakkori and Teddlie (2003) identified the need to determine where integration takes place in the

research; for the purpose of this research, integration takes place at the analysis stage with the data derived from questionnaires informing the interview data collection; the data derived from the interviews was then used to determine data collection from observations.

3.4.4 Time Horizon

A longitudinal study was dismissed because of the time constraint associated with the research, and the research question was not concerned with changes over time. A cross sectional study was chosen to analyse the research question at a particular point in time, which would be underpinned by questionnaires, interviews, observations, a mixture of qualitative and quantitative data collection and analysis and grounded theory.

3.5 Research Conceptual Model

This section of the thesis depicts how the literature review of sections 3.3 and 3.4 were applied to the research.

3.5.1 Philosophical Position

The philosophical stance required further explanation to underpin the research design and the contribution to knowledge for this thesis. The previous choice was based on high-level choices, resulting in interpretivism being selected due to the researcher interacting with the human subjects of the enquiry (Walsham, 1995). Further assessment of all three stances was undertaken against the main research question with the detailed output depicted in APPENDIX A, with a further depiction of the assessment shown in figure 3-2 on page 47.

Figure 3-2 shows an ontological stance justified towards interpretivism, which supports the research question seeking to understand relationships and interactions within employee engagement. The epistemological view is a realist stance, suggesting that the research question is seeking to acquire empirical data but to explain the social world through others eyes whilst the methodology suggests a combination of positivists and interpretivist methods to achieve the

research question, which leads to questionnaires, interviews and observations being explored in more depth.
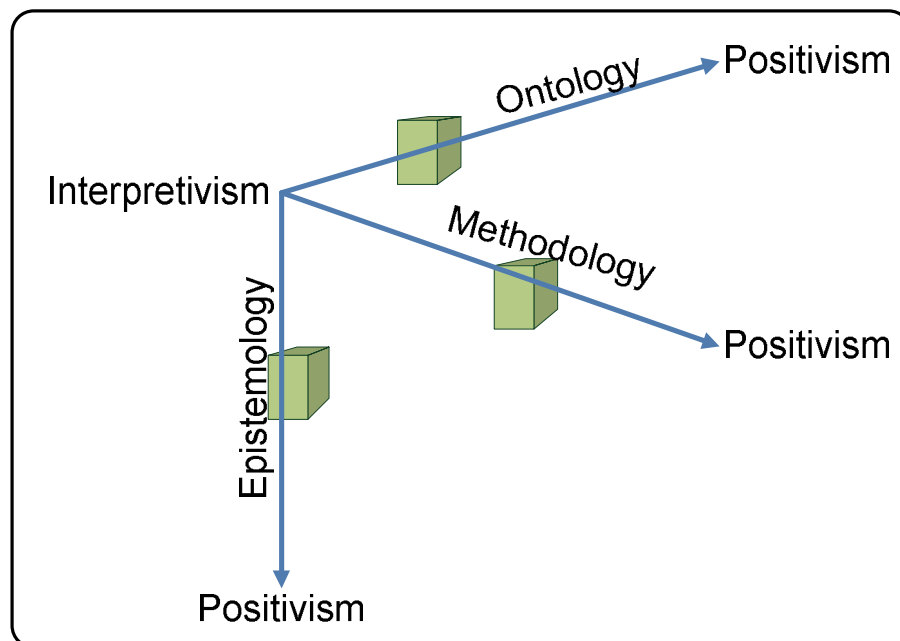
Figure 3-2: The Philosophical Stance

3.5.2 Questionnaire, Interview and Observation Design

According to Gillham (2000) questionnaires are one method that can be used to gather data, which can then be analysed to test a range of hypothesis operating at the structured end of the continuum. The other main technique a practitioner-researcher may use to acquire data is an interview, which may be structured or unstructured. An unstructured interview does not have a pre-constructed list of questions to work through whilst a structured interview is a series of pre-constructed questions that are read out to the interviewee in the same order (Saunders et al. 2009). The main difference between an interview and a questionnaire is that an interview does not offer the interviewee a range of answers to choose from (Gillham 2000) which in turn gives the practitioner-researcher a wide range of data to analyse. However, one can argue that a structured interview is a questionnaire through which the practitioner-researcher is present with the respondent to complete the answers, offering a mix of pre-determined answers and open answers; as such questionnaires and interviews were considered to be one and the same for this thesis; resulting in

questionnaires being explored more thoroughly. According to Gillham (2000) the positives of a questionnaire, in relation to this thesis, were:

- It can achieve data quickly in a compacted timeline
- Participant anonymity
- Less interviewer bias
- Standardises the questions, reduces ambiguity
- Generates data to test a hypothesis

The concept of achieving data quickly in a compacted timeline was considered appropriate because it enabled the practitioner-researcher to begin to build a data set, which could then be used to test the research question. The use of a questionnaire also facilitated participant anonymity, which facilitated the respondent answering more openly, thus creating a more reliable data set. Conversely, Gillham (2000) the negatives of a questionnaire are:

- Low data quality
- Low response rate
- No emotional responses
- Opportunity of missed data
- Social bias

The concept of poor data quality is a polarized view of achieving data quickly in a compacted timeline. The interpretation was that questionnaires are completed hastily, suggesting that respondents are not giving too much thought to their answers, which in turn casts doubt over the credibility of the research, i.e. is the data set the practitioner-researcher is using skewed by non-accurate responses leading to incorrect conclusions regarding the testing of the research question?

A low response rate was a fear, with Gillham (2000) suggesting that a response rate of less than 30% for a questionnaire is realistic but greater than 50% is good. The response rate may be governed by a number of external factors such as how interesting the topic under research is, how engaging the questions are

and do the respondent's know the practitioner-researcher personally. It can be argued that questionnaires remove the emotion of the response, offering the respondents a range of pre-determined answers that make analysis of the data easier for the practitioner-researcher. Not all of the pre-determined answers may reflect the possible answer of the respondent, and they may feel obliged to choose an answer or choose not to answer the question. Either of these options may yield skewed responses in the data set through the opportunity of missed data or social bias, whereby the politically correct answer or the answer the respondent thinks the practitioner-researcher or their peers would choose is also the one they choose.

Lietz (2009) has undertaken research into questionnaire design, which addresses the cognitive process that respondents go through when answering the questions. Much of Lietz's (2009) findings were applied to the design of the questionnaire for this research. Lietz (2009) talks of language and successfully using language that respondents will understand. Banas and Rohan (1971) identified the need for the research to meet the objectives of the practitioner-researcher and also corporate management. Trade-offs were identified and typically included the type of language used to overcome misunderstanding (Banas and Rohan, 1971) as well as the perceptions of the employees, supporting Gillham's (2000) concept of social bias.

Israel (1992) suggests that the focus in determining the sample size should only be on the confidence level and the degree of variability. However, according to Watson (2001) there are five steps to follow in determining the sample size:

- Determine Goals
- Determine desired Precision of results
- Determine Confidence level
- Estimate the degree of variability
- Estimate the response rate

Questions were limited to circa 20 words maximum (Lietz, 2009) in order to keep the respondent engaged, with grammar kept simple. Some terminology was used that was common parlance within the alliance project, but this was deliberately designed to engage the respondent and keep the questionnaire personal. A grouping tactic was applied, with the groups determined by the section heading developed as part of the scope reflection. The grouping tactic ensured that the respondents were answering questions of a similar nature once and not multiple times and at different stages of the questionnaire, as well as providing a logical order to the questions. Routing of the questions was attempted in the early development of the questionnaire, in order to facilitate the respondent moving swiftly through the questionnaire where groups of questions were not appropriate. However, the early drafts proved difficult to administer with respect to getting the question routing aligned correctly. It was decided that routing between sections would be limited to whether the respondent returned to their parent company or not. Routing within sections was easier to align and remained part of the questionnaire development.

Potential ambiguity in the drafting of the question, as well as the responses, was overcome by avoiding questions that contained two different verbs or concepts (Lietz 2009) with a further focus on ensuring that complex questions were broken down into smaller questions to avoid ambiguity of what was being asked. In order to keep the respondents engaged, positive language was used in the drafting of the questionnaires, with pre-determined responses also using positive language. Having developed the questions, the focus then moved to the answers as they form the basis of the data set that is to be analysed further. According to Lietz (2009) the Likert scale is most commonly used with the 5 and 7-point scales most commonly used. The practitioner-researcher opted for a 5-point scale, based on the need to acquire absolute judgements (Lietz, 2009) in order to satisfy the scope of the research, i.e. greater than 5 points would give the respondents more choice, but given the small size of the sample population, this may not lead to any conclusive results; conversely 3 points would narrow the choices with the possibility of results becoming skewed or biased to the practitioner-researcher's selection of criteria. Verbal labelling of the scales was chosen over numerical labelling to reflect the respondents' profession.

According to Lietz (2009) the direction of response scales does not matter, however the practitioner-researcher chose to follow convention and ensure that the response scales had the most positive outcome at the extreme right, with the least positive outcome to the extreme left of the scales. Open-ended questions were only used at the end of the questionnaire, enabling the respondent to add further information. The outcome of the pilot would determine if these types of questions would actually add any value.

The questionnaires were distributed via email; the practitioner-researcher opted to include an opening letter with the questionnaires to make it appear more personal, given that the intended respondents are known to practitioner-researcher, and vice-versa. This was a direct attempt by the practitioner-researcher to ensure that the response rate would be greater than 30% (Gillham, 2000). The fully developed questionnaires may be found in APPENDIX B.

3.5.3 Case Study Design

The nature of the research suggested that intense research methods were required in order to develop an emergent theoretical framework or policy. The output from case study research is rich in data, supporting the grounded theory approach. Extant literature suggests that the seminal work of Yin (2009) was used to design case studies with Yin (2009) with the validity and reliability of the case study shown in table 3-2.

Having identified the validity of the case study research, current literature suggests that multiple case studies have limitations based on a lack of rigour (Amaratunga and Baldry, 2001; Eisenhardt, 1989; Voss, et al., 2002; Meredith, 1998; Zivkovic, 2012); yet the evidence from multiple case studies is considered compelling (Amaratunga and Baldry, 2001). The rigour was provided via the collection of multiple sources of evidence, and the chain of evidence was generated through emergent properties and multiple data collection techniques. The use of multiple data collection techniques supports the choice of a multi methods approach; demonstrating the convergence of the evidence as part of

the case study design and theory building through triangulation as shown in figure 3-3 on page 54.

Table 3-2: Validity and Reliability in Case Study Research

Tests	Definition	Case Study Tactic	Research Phase
Construct Validity	Identifying correct operational measures for concepts being studied	Multiple Sources of Evidence	Data Collection
		Chain of Evidence	Data Collection
		Review Draft Report	Composition
Internal Validity	Establishing a causal relationship whereby certain conditions are shown to lead to other conditions	Pattern Matching	Data Analysis
		Explanation Building	Data Analysis
		Time-Services Analysis	Data Analysis
External Validity	Defining the domain to which a study's finding can be generalised	Replication Logic in Multiple Case Studies	Research Design
Reliability	Demonstrating that the operations of a study – such as the data collection procedures can be repeated with the same results	Use Case Study Protocol	Data Collection
		Develop Case Study Database	Data Collection

Source: Yin (2009): Case Study Research: Design and Methods

The triangulation technique used was based on the seminal work of Jick (1979) and enabled qualitative and quantitative data to be compared. The data presented in this thesis used a triangulation technique with coding to establish the triangulation linkage. This linkage will assist in the emergent theory building using grounded theory. Triangulation in its basic form is the linking of qualitative and quantitative data (Yeasmin and Rahman, 2012). The practitioner-researcher concurs with Yeasmin and Rahman (2012) that triangulation reduced the impact of bias and improved the effectiveness of the findings.

The use of coding supported the triangulation. Coding is based on the seminal work of Saldana (2009) and uses first and second cycle coding methods. First cycle coding incorporated attribute coding, descriptive coding and values coding, with the latter only applicable to structured interview transcripts (see APPENDIX C for a sample interview). Given this is multi-method research, magnitude coding was applied to support the triangulation phase, with the usual high, medium and low codes to be used (Saldana, 2009). Secondary cycle coding was also used.

Pattern coding developed the attribute meaning back to the research question, thus grounding the data against the purpose of the research (Saldana, 2009). Axial coding was then used to describe the relationships between the pattern codes, providing an additional layer of triangulation and robustness (Saunders et al., 2009). It also helped determine the success factors of a best-for-project delivery team based upon the motivations of the employee and the participant organisation by focusing on the relationship component of the question. The final secondary code deployed was theoretical coding. This provided robust underpinning to grounded theory, demonstrating the chain of evidence and where theoretical concepts were borrowed from to assist in the development of new theory (Saldana, 2009).

The coding was applied to questionnaires and interviews. Questionnaires provided a rich source of raw data, with the output informing the structure and development of the semi-structured interviews. Whilst the data output was quantitative, the output from the interviews was qualitative, thus defining the need for a multi-methods approach. All interviews were digitally recorded and transcribed (see APPENDIX C for a sample interview) to facilitate coding. All coding to be used can be found in section 3.6, leading to the development of theory.

Theory was built from case analysis (Yin, 2009). This drew upon empirical data obtained from multiple case studies and a comparison was made using pattern coding, providing the evidence that needs to be linked. These patterns were used to develop convergence on a generalised pattern and the final theory was then built. Theory verification of the new emergent theory was then compared to existing literature thus providing internal validity. This approach was considered to be vitally important to the research because the findings rest on three case studies with little or no supporting theories and literature in the research field and was underpinned through a grounded theory lens.
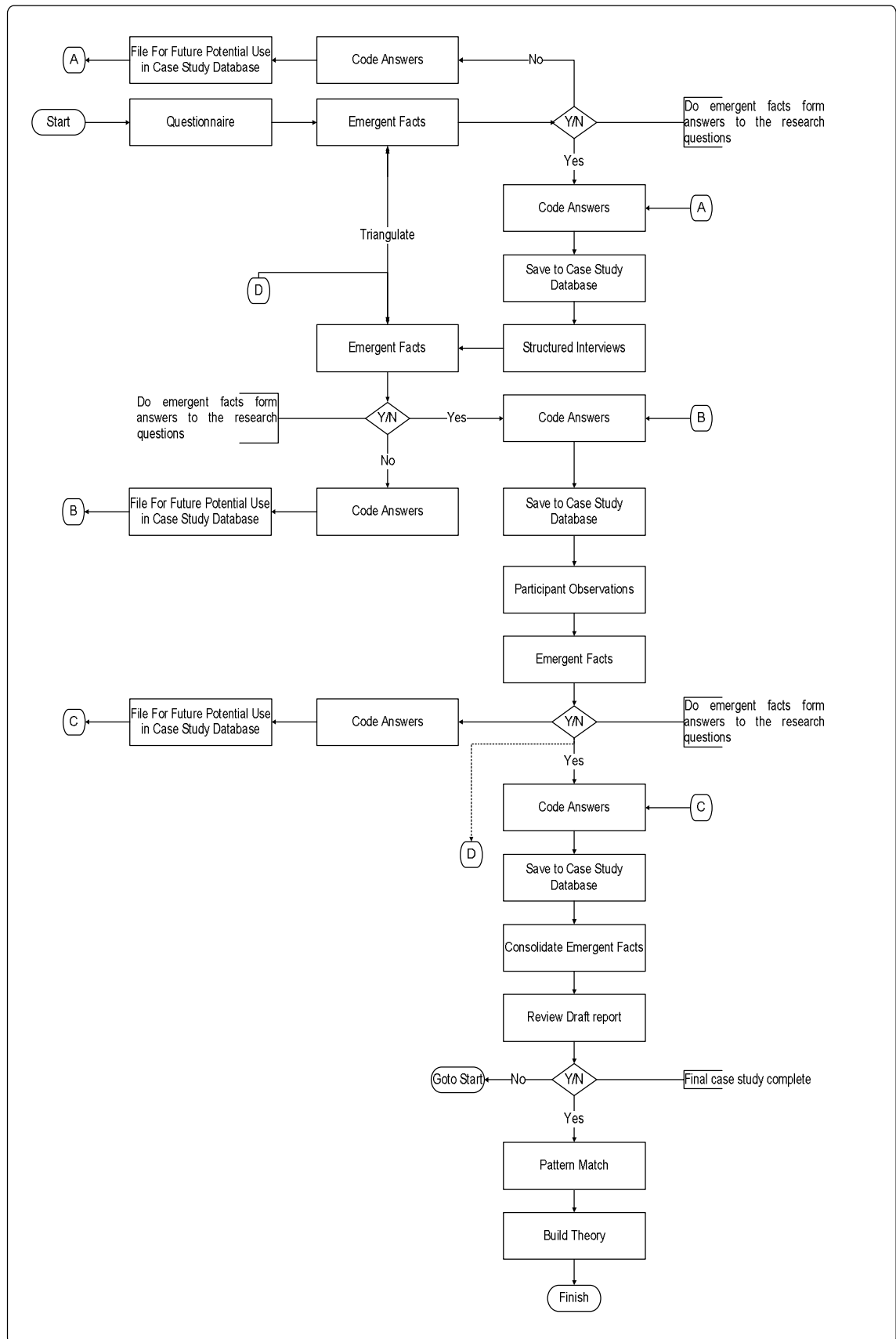
Figure 3-3: The Case Study Design and Triangulation

Grounded theory (Glaser and Strauss, 1967; Strauss and Corbin, 1990; Dey, 1999; Fendt and Sachs, 2008; Jones, 2009; Zarif, 2012) enabled theory-building explanation through emergent properties and replication to be documented for repeatability across cases studies and multiple data collection techniques. According to Douglas (2003) grounded theory enables the practitioner-researcher to facilitate the emergence of theory through the empathy of respondents and how they construct their world. For the purpose of this research, 'constructing of their world' was concerned with how employees construct the engineering alliance through an understanding of their role, what is expected of them and what role their organisation undertakes in the engineering alliance. Grounded theory was used to underpin the model development through the lens of developing predictive ability (Douglas, 2003), whereby the best for project success factors of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994) were determined, with conclusions evidenced through an audit trail.

3.6 The Research Design Instruments

This section of the thesis explains how the research design instruments were developed with a focus on how the five theoretical concepts support the development[1].

3.6.1 Question Development and Analysis

This thesis uses two questionnaires, one for case study #1 and one for case study #2. Case study #3 did not require a questionnaire because of its lack of maturity as an engineering alliance. The questionnaires were developed from the literature review but it should be noted that only certain questions were taken forward within this research; the reason being that the practitioner-researcher was solving more than just this research project with the questionnaire. In order to present clarity within this thesis, the questions taken forward for the research have been summarised in the following commentary, whereby the reader will be directed to which question was used in which case study and also how that question was then used within chapter 4 and the data analysis.

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[1] The glossary of terms for the pattern coding can be found in APPENDIX D

Table 3-3 depicts the questions taken forward for the extension to Kahn's (1990) model and the concept of meaningfulness. Each of the sub-concepts that provide the extension to Kahn's (1990) model has specific questions that were designed to test these sub-concepts. In some instances, such as the challenge and workload sub-concepts, multiple questions were developed to determine a number of emergent themes because the literature review suggested that these concepts had a number of potential themes that may emerge from the analysis. This particular set of questions was designed to be specific about each sub-concept as the pilot questionnaire revealed that there is ambiguity in terminology used between theory and praxis.

Table 3-3: Questions Taken Forward for Meaningfulness

Kahn (1990) Extended Model	Literature Review Alignment	Question	Chapter 4 Identifier	Questionnaire	
				Case Study #1	Case Study #2
Meaningfulness	Autonomy	Is there a high level of autonomy within your team?	Table 4.21	66c	-
	Challenge	Did you receive a promotion in job status during your time within the engineering alliance?	Table 4.22	36d	36d
	Challenge	Please rate how your individual excellence was recognised by your line manager?	Table 4.23	100a	57a
	Challenge	Please rate how your importance to the team was recognised by your line manager?	Table 4.24	100b	57b
	Workload	Do you feel able to plan your time management any better?	Table 4.25 (plan)	84	-
	Workload	Please describe the frequency of meetings you attend?	Table 4.25 (frequency)	85	-
	Workload	Do you feel that the level of meetings is appropriate for the project?	Table 4.25 (appropriate)	86	-
	Control	Do you feel like a parent company or alliance employee?	Table 4.26	37b	37b
	Leadership	How visible are the alliance leadership to you?	Table 4.27	39a	39a

Table 3-4 depicts the questions taken forward for the extension to Kahn's (1990) model and the concept of safety. Each of the sub-concepts that provide the extension to Kahn's (1990) model has specific questions that were designed to test these sub-concepts. The reader will notice that this set of questions is more direct than the meaningfulness set of questions; this is because the pilot questionnaire revealed there was no ambiguity in the understanding of the terminology. The exceptions to this were the 'trust' and 'value' sub-concepts whereby the questions were written to aid the respondent in eliciting an answer that would not yield a non-response. That is to say that for trust, the question was developed to relate to integrity because the pilot group understood the term integrity was narrower in its definition that trust; the term trust was simply considered to be too emotional. The term 'value' was considered to be ambiguous and was referred to as individual excellence, which was considered to be a measure of the value of the employee to their manager.

Table 3-4: Questions Taken Forward for Safety

Kahn (1990) Extended Model	Literature Review Alignment	Question	Chapter 4 Identifier	Questionnaire	
				Case Study #1	Case Study #2
Safety	Community	Please rate how easy you found it to acquire new information in the alliance?	Table 4.28	100f	57f
	Conflict	Is there any conflict between partners?	Table 4.29	10	10
	Conflict	How often does conflict occur between resources?	Table 4.30	11	11
	Conflict	Is the conflict related to protecting core skills?	Table 4.31	12	12
	Trust	Please rate how easy you found it to demonstrate your integrity to your manager?	Table 4.32	100h	57h
	Value	Please rate how your individual excellence was recognised by your line manager?	Table 4.33	100a	57a

Table 3-5 depicts the questions taken forward for the extension to Kahn's (1990) model and the concept of availability. Each of the sub-concepts that provide the extension to Kahn's (1990) model has specific questions that were designed to

test these sub-concepts. This particular set of questions was easier to develop than the specific sets for meaningfulness and safety because the sub-concepts of reward and recognition are widely understood within the alliance to be either financial or non-financial in nature, which aligns with the literature review. The questions were developed to specifically test if bonus payments had been received (financial) or promotions had been attained (financial) or if training had been received (non-financial). The sub-concept of self-confidence questions were developed to test the employees' ability to either pursue a promotion or whether they felt a promotion was achievable with a further question developed to test the line managers' support. This particular question was originally considered to test employee voice but the pilot group felt that it was misleading and that it supported self-confidence in the sense that the line manager's support of the employee looking for a promotion could be viewed as improving the self-confidence of the employee.

Table 3-5: Questions Taken Forward for Availability

Kahn (1990) Extended Model	Literature Review Alignment	Question	Chapter 4 Identifier	Questionnaire	
				Case Study #1	Case Study #2
Availability	Recognition	Have you received a bonus payment?	Table 4.34	36b	36b
	Recognition	Have you received a promotion?	Table 4.35	36d	36d
	Recognition	How long have you worked in the alliance?	Table 4.36 (long)	101	-
	Recognition	What is the maximum length of service of an employee before suffering burnout?	Table 4.36 (maximum length)	103	-
	Reward	Does the alliance provide you with long term job security?	Table 4.37	19	19
	Reward	Have you received training during your time in the alliance?	Table 4.38	18	18
	Self Confidence	Are you looking for a promotion in the alliance?	Table 4.39 (looking)	105	-
	Self Confidence	Are you being supported by your line manager?	Table 4.39 (support)	105a	-
	Self Confidence	Do you feel promotion is achievable?	Table 4.39 (achievable)	105b	-

Table 3-6 depicts the questions taken forward for the extension to Kahn's (1990) model and the concept of organisational commitment. Each of the sub-concepts that provide the extension to Kahn's (1990) model has specific questions that were designed to test these sub-concepts.

Table 3-6: Questions Taken Forward for Organisational Commitment

Scholl (1981) extension to Kahn (1990) Extended Model	Literature Review Alignment	Question	Chapter 4 Identifier	Questionnaire	
				Case Study #1	Case Study #2
Organisational Commitment	Inter-relationship	Please describe your interpretation of the alliance partnership?	Table 4.40	7	7
	Behaviours	What is the relationship like between partners?	Table 4.41	9b	9b
	Behaviours	Is there any conflict between partners?	Table 4.42	10	10
	Inter-relationship	How often does conflict occur between resources?	Table 4.43	11	11
	Inter-relationship	Is the conflict related to protecting core skills?	Table 4.44	12	12
	Learning	Does your parent company learn from other partners?	Table 4,45	17	17
	Career Paths	Have you received training during your time in the alliance?	Table 4.46	18	18
	Career Paths	Does the alliance provide you with long term job security?	Table 4.47	19	19
	Inter-relationship	Is there a collaborative relationship between partners?	Table 4.48	8	8

The three previous sets of questions related to meaningfulness, safety and availability were designed as extensions to Kahn's (1990) model to test people and employee engagement. This particular set of questions was developed to explore Scholl's (1981) organisational commitment and how organisations interact with one another through inter-relationships and behaviours. The questions were also designed to link back to Kahn's (1990) extended model through career paths and learning, recognising that organisational constructs are

human centred in nature. The questions were easier to develop than the previous question sets of meaningfulness, safety and availability as the terminology was understood by the pilot group who also felt that the questions were representative of issues that they were currently facing

The questions for each of the four concepts of meaningfulness, safety, availability and organisational commitment were developed to either have a 'yes', 'no', 'don't know' response option or a likert scale response option. These questions were closed in nature and the likert scale definitions were agreed with the pilot group. Analysis of the questions was performed using second cycle coding and descriptive statistics. The descriptive statistical findings were then analysed with respect to the five theoretical perspectives and either accepted or excepted (excepted depicting excluded findings) as per table 3-7 and in conjunction with the best for project success outcomes of trust, co-ordination, communication and interdependence (Mohr and Spekeman, 1994). These findings formed the beginning of the pattern building and emerging theory which then informed the semi-structured stage of the research focussing on leadership style, the alliance as a community, employee voice through recognition and reward and behaviours between the alliance partners presented as conflict.

Table 3-7: Questionnaire Coding

Research Phase	First Cycle Coding			Second Cycle Coding		
	Attribute	Descriptive	Value	Pattern	Axial	Theoretical
Questionnaire	1	N/A	Likert	N/A	Accept Except	Systems Thinking Social Exchange Theory Cost Transaction Economics Game Theory Principal Agent Theory

3.6.2 Interview Development and Analysis

Interview questions were developed from the emergent themes of the questionnaire. The purpose of the interviews was to explore these emergent themes in more depth and to triangulate the findings of the questionnaire to manage any imported bias, which lead to the interviews being semi-structured in format. The questions for the semi-structured interview were based on the themes emerging from the questionnaires and focussed on leadership style, the alliance as a community, employee voice through recognition and reward as well as behaviours between the alliance partners presented as conflict.

Table 3-8 depicts the interviewee's and their organisational entity type with interviews carried out within case study #1 only. Case study #2 was a life expired alliance and the practitioner-researcher decided that memories were not lucid enough to collect and analyse data. Meanwhile, case study #3 was not considered to be of a mature state to undertake interviews that would yield data that could be analysed and provide a contribution to the research. The interviewee identities are presented anonymously but the practitioner-researcher was able to trace the interviewee through the interviewee traceable ID code in order to clarify the data, if needed, during the data analysis. Where findings are presented in this thesis, a thesis identifier was used for ease of narrative.

Table 3-8: List of Interviewees used in Case Study #1

ID Code	Entity Type	Chapter 4 Identifier
IN1	Consultant	Interviewee 1, Consultant
IN 2	Client	Interviewee 2, Client
IN 3	Consultant	Interviewee 3, Consultant
IN 4	Consultant	Interviewee 4, Consultant
IN 5	Consultant	Interviewee 5, Consultant
IN 6	Client	Interviewee 6, Client
IN 7	Consultant	Interviewee 7, Consultant
IN 8	Client	Interviewee 8, Client
IN 9	Contractor	Interviewee 9, Contractor
IN 10	Designer	Interviewee 10, Designer
IN 11	Designer	Interviewee 11, Designer
IN 12	Contractor	Interviewee 12, Contractor

Interviewees were chosen in a randomised manner with the practitioner-researcher approaching the research population asking for volunteers. The list cited in table 3-8 is representative of those volunteers whereby each volunteer

attended a 30 minute semi-structured interview. The findings of the interview were coded using the parameters shown in table 3-9 through axial coding to accept or except the findings in accordance with the theoretical concepts and then triangulated with the output of the questionnaires to form emerging theory through pattern building of the best for project success outcomes of trust, co-ordination, communication and interdependence (Mohr and Spekeman, 1994).

Table 3-9: Interview Coding

Research Phase	First Cycle Coding			Second Cycle Coding		
	Attribute	Descriptive	Value	Pattern	Axial	Theoretical
Interview	N/A	Collaboration Evidence Motivation Participation Relationships Systems Thinking Success	Plus Minus Success Failure	Blame Comm's Failure Root Cause Success Team Work	Accept Except	Systems Thinking Social Exchange Theory Cost Transaction Economics Game Theory Principal Agent Theory

Table 3-10 depicts how the interviews were recorded and then analysed using first and second cycle coding with a link back to the underpinning theory. The commentary columns relate to determining the arguments that are used to support the extracts that were then used within the thesis. The reader will notice in the commentary that theory is emerging and that theory begins to ask questions that can be taken forward into case study #3 and its observations.

This approach to coding and traceability was also used for the observation findings but it important to recognise that where an extract from an interview transcript or an observational finding has been used in the thesis, the original source can be traced to provide a chain of evidence within the research.

Table 3-10: Interview Coding and Traceability

Original Extract	Thesis Extract	First Cycle		Second Cycle			Commentary		
		Description	Value	Pattern	Axial	Theory	Description		
I don't think it makes much difference to be honest. It just means that I suppose it's clearer that when you're in a joint venture that you're in it for that, whereas obviously now, well under the old central Alliance one it's still everybody's looking after their own and just happen to have a common goal, rather than a common interest if you like.	…You happen to have a common goal rather than a common interest	Trust	Success	Team Work	Accept	Systems Thinking	The community is bound by trust, under pinning a fair community that is free to interact with one another; peer to peer or upwards and downwards	The community recognises that trust is built upon have common interests that are not competing	This suggests that trust leads to better team work and collaborative thinking

3.6.3 Observation Development and Analysis

The observations were carried out using the triangulated emergent themes of leadership style, the alliance as a community, employee voice through recognition and reward and behaviours between the alliance partners presented as conflict, as derived from output of the questionnaires and interviews. The purpose of the observations was to explore these emergent themes in more depth and to triangulate the findings of the observations to manage any imported bias. Table 3-11 depicts the participants who formed the observation group for case study #3. It should be noted that the practitioner-researcher developed this observation group as part of a wider remit within the engineering alliance; that is to say that the observation group was actually a focus group within this case study and its representatives were invited to participate, whereby the contractor opted not to participate.

Table 3-11: Observation Participant Types for Case Study #3

Entity Type	Number of Representatives
Consultant 1	3
Consultant 2	7
Client	2
Contractor	0

These participants within this group were analysed as a group, with the finding recorded as a 'focus group' or individually with the finding recorded as 'general observation' and finally the practitioner-researcher made an ethnographical observation whereby the findings were recorded as 'ethnography'. In particular, the practitioner-researcher was utilising the findings of the questionnaire and interviews (as triangulated) in order to seek further triangulation in the areas of leadership, community, employee voices and behaviours. The findings were analysed and coded as per table 3-12 and then further triangulated with the findings of the questionnaires and the interviews through emerging theory and pattern building. The practitioner-researcher then undertook axial coding to accept or except the findings in accordance with the theoretical concepts and in conjunction with the best for project success outcomes of trust, co-ordination, communication and interdependence (Mohr and Spekeman, 1994).

Table 3-12: Observation Coding

Research Phase	First Cycle Coding			Second Cycle Coding		
	Attribute	Descriptive	Value	Pattern	Axial	Theoretical
Observation	N/A	Collaboration Evidence Motivation Participation Relationships Systems Thinking Success	Plus Minus Success Failure	Blame Comm's Failure Root Cause Success Team Work	Accept Except	Systems Thinking Social Exchange Theory Cost Transaction Economics Game Theory Principal Agent Theory

3.7   Case Studies Taken Forward

The three case studies represented different stages of alliance lifecycle maturity. Case study #1 was a live operational alliance[2], case study #2 was a life expired alliance[3] and case study #3 was an early stages formation alliance[4]. The specific design of the case studies is explored further in chapter 4 to supplement the analysis.

3.8   Ethical Considerations

According to Easterby-Smith et al. (2012) there is convergence within social science research that Universities should adopt definite ethical codes. The research population consisted of adults who were over the age of 18, considered to be engineering professionals who do not work with children, animals or vulnerable adults. The research tools and techniques included questionnaires, interviews and observations. Questions were carefully constructed to avoid ambiguity that may have generated negative emotions for the participant. The

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[2] Alliance is 7 years old

[3] Alliance was 5 years old

[4] Alliance was less than 6 months old

participants were fully briefed via a briefing document prior to the issuing of a questionnaire or an interview, such that they were not surprised by the questions and/or the nature of the research. The privacy of the research population was and remains to be important with a focus on anonymity of individuals and their views and opinions. Both the questionnaire and interview briefing documents outlined that no views or opinions expressed would be traceable to the individual or the organisation that they work for. In order to achieve this, individuals were identified via a code system, such QN1, QN2, IN1, IN2 etc. The master document that enables the research data to be followed up by the practitioner-researcher was created in Microsoft Excel and remains password protected. All questionnaire data, interview transcripts and digital recordings were located on a password encrypted hard drive, with all back up of this data also located on a password encrypted hard drive. All data remained confidential and was not easily or readily available for others to view or misuse. In essence, any data collected complied with the Data Protection Act 1998. Ethical approval can be found in APPENDIX E of this thesis.

3.9   *Summarising the Conceptual Research Model*

The research methodology was a multi-methods approach using both qualitative and quantitative data collection and analysis. The philosophical position of the research is delivered through an inductive approach with an interpretive lens and recognises the involvement of the practitioner-researcher within the research itself (ethnography) using questionnaires, semi-structured interviews; and observations. The questionnaires provided underpinning data that was used to formulate the semi-structured interview questions. The semi-structured interview questions enabled the research to explore employee engagement more deeply and to gauge personalised views to control the bias in the research. The final round of observations underpinned the removal of bias. Theory building was developed through the application of grounded theory, with methods that sought triangulation of findings – this included coding of data with deliberate design to manage any personal practitioner-researcher bias that may have been imported into the research through an ethnographic lens. This deliberative research design included the development of three case studies that utilised a cross sectional time horizon.

4 <u>Data Analysis</u>

This chapter investigates the findings of data collected through questionnaires, interviews and observations, as described in chapter 3. It begins with outlining the case studies under consideration and then begins to analyse the developed employee engagement model through the distinct elements of meaningfulness, safety, availability and organisational commitment as described on page 35 of the literature review.

This chapter then concludes with a summary of the findings to establish the applicability of the developed employee engagement model within an engineering alliance in readiness for the development of the employee engagement model to be refined for commercial purposes in chapter 5.

4.1 *Case Study Descriptions*

Three case studies that are representative of the lifecycle of engineering alliances were identified for this thesis. The first case study depicted an engineering alliance that was operational and in excess of seven years old; the second case study depicted an engineering alliance that had expired and had been operational for five years; the final case study depicted an engineering alliance that was less than two months old and in its early stages of formation. The three engineering alliances agreed to data being collected, analysed and presented in this thesis; the only caveat was to provide anonymity to protect the participating organisations future participation within engineering alliances.

The engineering alliances within the three case studies were formed from two types of organisational entities; owner participants and non-owner participants. Owner participants are organisational entities that are involved beyond the lifecycle of the engineering alliance, whilst non-owner participants are only involved for the lifecycle of the engineering alliance. Owner participants were either a government-backed agency operating within the public sector or a private client operating within the private sector. A government backed agency reported directly to the UK Government, whilst private clients were privately owned organisations that may or may not have been listed on the stock exchange. Within engineering alliances, owner participants are often referred to

as the Client. Non-owner participants were categorised into three types; consultants, designers and contractors.

Each of these types were defined by the services that they offered the engineering alliance, which were further classified into technical and non-technical roles. Technical roles depicted traditional engineering function, whilst non-technical roles depicted commercial or operational responsibilities. Table 4-1 depicts the three non-owner participant types and the services that they offered within the engineering alliance.

Table 4-1: Non Owner Participant Types

Non Owner Participant Type	Services Provided	
	Technical	**Non-Technical**
Consultant	• Design Governance • Feasibility Design • Niche Services	• Commercial Management • Project Management
Designer	• Detailed Design • Research & Development	• Construction Support • Procurement Management
Contractor	• Installation • Testing • Commissioning • Decommissioning	• Construction Management • Maintenance Management

The technical roles defined in table 4-1 included design governance which was a review of the designer's detailed design for its compliance with the client's requirements and specific legislation and policy, as determined by the industry; i.e. design governance covered compliance and ensured that best practice was adopted within the designs. Best practice referred to ensuring that all designs adopted similar approaches and technologies, such that risks were mitigated and knowledge was captured and disseminated.

Feasibility design refers to design activities that were undertaken at the early stages of the project lifecycle. This activity is the precursor to the detailed design and included developing a number of solutions for the client, agreeing on the optimum solution that delivered the project on time and with the optimum budget that did not impact upon the quality. The final element of feasibility design was to develop the requirements for the detailed design. Niche services describe a very

specialist service that is not readily available from the labour market and is not needed fulltime within the engineering alliance. Niche services were considered to be highly skilled and the skills were not easily transferable to other employees within the engineering alliance. The outputs from the niche services often informed other activities, such as feasibility or detailed designs. Detailed design refers to the design activity that develops the feasibility design with sufficient detail such that the equipment and materials can be specified, sourced and procured from the supply chain. Detailed design also produces drawings and instructions for the design to be built by the construction partner. Research and development refers to the activities undertaken by the designer, whereby new or novel equipment was developed in preparation for its inclusion within the installation. The activity also incorporated elements of collaboration with the construction partner. Installation, testing and commissioning refers to the activities undertaken by the construction partner. These activities addressed the construction of the design, utilising the output from the detailed design activities. Decommissioning referred to the safe removal of pre-existing but life expired equipment that was present at the site.

The non-technical roles defined in table 4-1 are the roles that are needed to support the technical roles in order to deliver the project. They included commercial management, which was the activity that encompasses the contractual elements of the alliance and compliance with the contract. This activity also included governance for the budgets associated with the engineering alliance for the project management activity, as well as supporting the procurement management activity. Procurement management is the activity through which equipment and materials were sourced and procured through the supply chain. This activity included the facilitation of tendering competitions to supply equipment and materials in bulk, but to be delivered to the correct sites and quantities in accordance with the project manager's instructions. Project management is the activity that oversees the project from its inception to completion; it encompasses feasibility design, detailed design and installation and commissioning. This activity included resource and budget management, as well as health and safety for the individual project, including construction management and maintenance management. Construction management is the

activity that addresses the construction phase of the project. It addresses preparing the site for construction activities, managing the health and safety at site, managing subcontractors, the resourcing of construction staff and ensuring construction support is obtained from the designer, with respect to queries on the design and procurement of equipment and materials and maintenance management. Maintenance management is the activity through which maintenance plans were developed for the client along with training. The activity also included ordering strategic spares for the client and the provision of storage for these items.

Having understood the owner and non-owner participant types, it was then possible to determine the constitution of the engineering alliances for each of the three case studies. The constitution of the engineering alliance partners for each case study, with respect to owner and non-owner participant types, are summarised in table 4-2.

Table 4-2: Case Study Constitutions

Case Study	Lifecycle	Consultant	Entity Type	Designer	Entity Type	Contractor	Entity Type	Client	Entity Type
					Participant Type				
One	Operational	✓	NOP	✓	NOP	✓	NOP	✓	OP
Two	Expired	✓	NOP	✓✓	NOP	✓	NOP	✗	✗
Three	Early Formation	✓	NOP	✓	NOP	✓	NOP	✓	OP

Key: NOP = Non Owner Participant   OP = Owner Participant or Client

Table 4-2 shows three case studies and between them they cover the entire lifecycle of an engineering alliance. In addition to this, the table shows that two case studies contain an owner participant and one case study contains two designers. Each of the case studies will now be described further with specific reference to the total employee numbers, as well as specific breakdowns, within each engineering alliance.

4.1.1 Case Study Populations

The case study populations were dissected into five demographics in order to address the research within this thesis: total population, gender, age, grade and entity. It should be noted that entity simply refers to the participating organisational entity type as being a consultant designer, contractor or client; i.e. the participant types of the case study constitutions shown in table 4-2.

These case study constitutions are made up of a total population that contains four demographics of total population, gender, age and grade. The total population within each engineering alliance enabled comparison of the case studies on a like for like basis, and known deficiencies were identified. Gender was assessed for male and female participants only; the need to record other gender types within the case study population's was not considered necessary because this is considered a diversity issue within the employee population and would have needed other considerations within diversity, such as ethnicity and disability, which would have made the population analysis too broad for the research.

The age demographic was considered necessary to ensure that employee engagement within an engineering alliance was assessed. The age group demographics were developed as follows: 18-24, 25-35, 36-45, 46-55, 56-64 and 65+. These age group categories were considered sufficiently broad enough for the research but there was an underlying issue regarding age discrimination that needed to be addressed. Therefore, the purpose of these age groups was not to determine the success factors based on age but to use age groups to inform where the positive success factors are held and how they can be used to target other age groups.

The grade demographic was developed to reflect the total population and to be able to correlate the total population against a job role within the engineering alliance. The four grades that were developed were: executive management, senior management, team leaders and team members. Executive management represented those members of the population who were parent company directors who also sat on steering boards for the engineering alliance. Executive

managers were not present on a day to day basis within the engineering alliance. Their remit did not extend to informing and executing operational instructions; instead they provided operational governance which ensures that the senior management were making decisions in the best interests of the engineering alliance.

Senior management represented those members of the population who were responsible for the day-to-day operations of the engineering alliance. The senior management formed an Alliance Management Board and reported to the executive management through the steering board. The senior management had a number of direct reports, called team leaders.

Team leaders represented the population that were responsible for overseeing the day-to-day delivery of the sub tasks within the engineering alliance. Team leaders had a number of direct reports, called team members who represented the employees who delivered the day-to-day sub tasks. Team members had no direct reports and represented the largest proportion of the population.

These categories were considered to be widespread enough to represent multiple organisational entities and to enable the research findings to be broadly focused in order to develop an employee engagement model.

4.1.2 Case Study One

Case study one represents an alliance that is over seven years old. It provided a cross sectional narrative during the period of research and was underpinned by a longitudinal narrative over a seven-year period. Case study #1 is a consortium, operating as a partnership that consists of a consultant, designer, contractor and a client. The consortium was established in 2006 for the delivery of a programme portfolio of projects that are designed to enhance the electrical apparatus associated with an electrical transmission system. The value of the programme is in excess of £2.8 billion and being delivered within the United Kingdom, across the Midlands and the North West of England. This was not an equal stakeholder partnership; the stakeholder partnership break down is shown in table 4-3.

Table 4-3: Case Study One Stakeholder Partnership

Partner Type	Stakeholder Percentage	Reason
Consultant	10	Provision of services considered to be low risk
Designer	40	Provision of services considered to have high risk
Contractor	40	Provision of services considered to have high risk
Client	10	Provision of services considered to be low risk

Table 4-3 depicts two major partners and two minor partners with the reasons cited for the stakeholder percentage split being related to risk of service provision. The types of service offered aligned to those cited in table 4-1 on page 68 for both technical and non-technical services. The total population for case study #1 was further broken down to that depicted in table 4-4.

Table 4-4: Case Study One Population

Measure	Total	By Gender		By Grade				By Entity			
		Male	Female	Executive Management	Senior Management	Team Leader	Team Member	Consultant	Designer	Contractor	Client
Number	127	113	14	4	6	12	105	23	58	38	8
Percentage	100	89	11	3	5	9	83	18	46	30	6

Table 4-4 depicts a total population of 127 people and is further categorised by gender, grade and entity. It depicts a total population that is biased towards a male gender; however, the gender split for this case study depicts a female population that is in excess of 6.3%, the published average female population in engineering. Based upon the total population, the sample size was calculated using the method defined in section 3.5.2 and APPENDIX F of this thesis. The outcome of the sample size analysis is depicted in table 4-5, indicating a favourable 30% response rate with a 16% error when compared to the ideal response.

Table 4-5: Case Study One Sample Size

Total Population	Ideal Response	Actual Response	Response Rate	Percentage Error
127	96	38	30%	16%

A 30% response rate was achieved through proactive engagement with the total population, whilst the percentage error is considered viable for this research, with conclusions drawn being cognisant of this response rate. The sample population was then further broken down in to four demographics, as shown in table 4-6.

Table 4-6: Case Study One Sample Population Breakdown #1

		Sample Population							
		By Gender		By Age					
Measure	Total	Male	Female	18-24	25-35	36-45	46-55	56-64	65+
Number	38	31	7	0	13	14	8	3	0
Percentage	100	82	18	0	34	37	21	8	0

Table 4-6 depicts a sample population of 38. It depicts a male to female percentage ratio of 82:18. The age demographic for this case study depicts zero returns for the age groups 18-24 and 65+. These zero returns cannot be directly attributed to these age groups being positively represented in the total population because that data was not made readily available; the interpretation of a zero response is explained as a zero response within the analysis and discussion of the research. The final total population breakdown relates to the grade demographic, as depicted in table 4-7.

Table 4-7: Case Study One Sample Population Breakdown #2

		Sample Population							
		By Grade				By Entity			
Measure	Total	Executive Management	Senior Management	Team Leader	Team Member	Consultant	Designer	Contractor	Client
Number	38	3	3	7	25	20	10	4	4
Percentage	100	8	8	18	66	53	26	11	11

Case Study #1 contained two thirds of its sample population as being represented as team members. The entity demographic is more skewed towards the consultant, with over 50% of the sample population representing this demographic. The analysis and discussion take cognisance of this anomaly, which is explained by the practitioner-researcher having greater access to this demographic and a greater influence, with respect to facilitating time for the respondents to be involved with the research. It should also be noted that the contractor, with the joint highest stake-hold, has the joint lowest representation within the sample population. The analysis and discussion take cognisance of this anomaly, which is explained by the reluctance of the contractor's demographic to participate within the research; which was attributed to a fear of the data being presented to the management team with no anonymity. Despite the efforts of the practitioner-researcher to provide anonymity, the contractor's demographic did not wish to participate.

4.1.3 Case Study Two

Case study two is a joint venture, operating as a partnership that consists of a consultant, two designers and a contractor. This was an equal stakeholder partnership, whereby by each participant had a 25% stake-hold in the joint venture. The joint venture was established in 2003 to facilitate the delivery of a programme portfolio of projects pertaining to the refurbishment and/or enhancement of buildings associated with the transportation sector with a value of £17 billion to be invested over 30 years. Table 4-8 depicts how the total population was broken down for case study two.

Table 4-8: Case Study Two Population

Measure	Total	By Gender		By Grade				By Entity			
		Male	Female	Executive Management	Senior Management	Team Leader	Team Member	Consultant	Designer 1	Designer 2	Contractor
Number	250	228	22	5	13	20	212	40	60	50	100
Percentage	100	91	9	2	5	8	85	16	24	20	40

Case study #2 had a total population of 250 people and is further broken down by gender, grade and entity. It depicts a total population that is representative of 91:9 gender percentage ratios, with a grade demographic that shows the Contractor having more than 25% of resources contributing to the total population with designer 1 almost securing 25% of the resource contribution. This is highly unusual practice within a joint venture but can be attributed to the need to have more human resources on site as opposed to design; if the actual numbers are analysed, then it can be seen that the consultant and designers 1 and 2 have similar levels of human resource contribution. The total population was used to determine the sample population, as depicted in table 4-9.

Table 4-9: Case Study Two Sample Size

Total Population	Ideal Response	Actual Response	Response Rate	Percentage Error
250	152	22	9%	21%

Case study #2 depicts a 9% response rate with an error of 21%. The response rate is considered to be acceptable given that this case study is life expired. Consideration was given to the lucid nature of the responses and whether they would actually introduce bias to the research. However, this was not considered to be a problem for this thesis, with respondents happy to record unbiased responses based on the presumption that their answers would not affect their future standing within their current employer. The sample population was further broken down for case study #2, as shown in table 4-10.

Table 4-10: Case Study Two Sample Population Breakdown #1

		Sample Population							
		By Gender		By Age					
Measure	Total	Male	Female	18-24	25-35	36-45	46-55	56-64	65+
Number	22	17	5	2	2	7	6	5	0
Percentage	100	77	23	9	9	32	27	23	0

Case study #2 contained a gender demographic with a male to female percentage ratio of 77:23. This particular case study yielded a widespread response within the age demographic, with only the 65+ age group not

represented. In this instance, it is possible to explain that this age group was not represented in the total population and that this will not have an adverse effect upon the analysis because case study #1 and case study #2 have zero representation in this age group demographic. The sample population of case study #2 was further broken down to determine the grade and entity demographics, as shown in table 4-11.

Table 4-11: Case Study Two Sample Population Breakdown #2

Measure	Total	Sample Population							
		By Grade				By Entity			
		Executive Management	Senior Management	Team Leader	Team Member	Consultant	Designer 1	Designer 2	Contractor
Number	22	2	4	6	10	10	1	5	6
Percentage	100	9	18	27	46	45	5	23	47

Table 4-11 reports that case study #2 has less than 50% of the sample population representing team members, depicting a skewing towards the three management demographics; this was not considered to have an adverse effect on the research outcomes. It also depicts a low response from designer 1 and this was considered to have an effect upon the output of the research, owing to the fact that designer 1 contributes 24% of the total population.

4.1.4 Case Study Three

Case study three is a consortium, operating as a partnership that consists of two consultants, a contractor and a client. This was not an equal stakeholder partnership; the stakeholder partnership break down is shown in table 4-12.

Table 4-12: Case Study Three Stakeholder Partnership

Partner Type	Stakeholder (%age)	Reason
Consultant 1	40	Provision of services considered to be high risk
Consultant 2	20	Provision of services considered to have low risk
Contractor	30	Provision of services considered to have high risk
Client	10	Provision of services considered to be low risk

Table 4-12 depicts two major partners and two minor partners with the reasons cited for the stakeholder percentage split being related to risk of service provision. The types of service offered aligned to those cited in table 4-1 for both technical and non-technical services. The partnership was established in 2013 for the delivery of a large scale complex capital investment in transportation infrastructure. The value of the programme was in excess of £800 million and is being delivered within the United Kingdom. Table 4-13 depicts how the total population was broken down for case study three.

Table 4-13: Case Study Three Population

| Measure | Total | By Gender | | By Grade | | | | By Entity | | | |
		Male	Female	Executive Management	Senior Management	Team Leader	Team Member	Consultant 1	Consultant 2	Contractor	Client
Number	160	130	30	7	13	20	120	64	32	48	16
Percentage	100	81	19	4	8	12	76	40	20	30	10

Case study three has a total population of 160 people and is further broken down by gender, grade and entity. It depicts a male to female gender percentage ratio of 81: 19, which is considered to have an adverse effect upon the research outputs and was considered to provide a balanced view of employee engagement. The forming state of this alliance was further broken down into the gender and age demographics shown in table 4-14.

Table 4-14: Case Study Three Sample Population Breakdown #1

| Measure | Total | By Gender | | By Age | | | | | |
		Male	Female	18-24	25-35	36-45	46-55	56-64	65+
Number	12	10	2	2	2	4	1	3	0
Percentage	100	83	17	17	17	33	8	25	0

Table 4-14 depicts the sample population. This sample population was not subject to the rigour of ideal sample size and response rate because it was a

sample population that formed a focus group for research purposes. The sample population had a male to female gender percentage ratio of 83:17, which was indicative of the total population and was considered to provide a view representative of the total population. It also depicts a good range of participation across the age groups, with the exception of the 65+ age group, which had no representative participation due to there being nobody within the alliance who qualified for that age category. The sample population can be further classified into grade and entity demographics, as shown in table 4-15.

Table 4-15: Case Study Three Sample Population Breakdown #2

Measure	Total	By Grade				By Entity			
		Executive Management	Senior Management	Team Leader	Team Member	Consultant 1	Consultant 2	Client	Contractor
Number	12	2	4	2	4	3	7	2	0
Percentage	100	17	33	17	33	25	58	17	0

Case study #3 depicts a bias towards management with only 33% of the team member population represented. This was not considered to be a concern because this was a focus group and the objective was to gather sound bites to support or object to the findings of the previous two case studies. It also depicts no representation from the contractor, which can be attributed to the contractor declining to participate with the research.

4.1.5 Summarising Case Studies

The case studies were then compared and contrasted with one another to ascertain any discrepancies between them, depicted in table 4-16.

Table 4-16: Comparing Sample Population

Case ID	Population	Sample Population			
		Ideal	Actual	Response Rate	Error
#1	127	96	38	30%	16%
#2	250	152	22	9%	21%

It is evident there is a difference in response rates between the case studies, with case study #2 reporting a much lower response rate than case study #1. However, case study #1 is considered to have a higher response rate owing to the practitioner-researcher being able to assist respondents with time during working hours to participate within the research. Case study #2 has a much lower response rate and this is partly explained by participants choosing not to participate as their memories were not of a lucid nature to do so. The errors are considered to be acceptable for both case studies and they are of a similar magnitude, enabling the case studies to be compared and contrasted for the demographics of gender, age, grade and entity.

Table 4-17 depicts the sample populations by gender, indicating a consistent and better than industry average for each case study. The sample populations' consistency ensured that the analysis of the data yielded consistent outcomes, leading to consolidated conclusions.

Table 4-17: Comparing Sample Population by Gender

Case ID	Percentage Representation		
	Total	Male	Female
#1	100	82	18
#2	100	77	23
#3	100	83	17

Table 4-18 depicts the case study analysis for the age group demographic. It clearly indicates the need to omit the 65+ age group from the analysis and discussion, whilst suggesting the age group 36-45 would yield consistent results. For all other age groups, the inference was that comparisons would need to be normalised during the analysis and discussion.

Table 4-18: Comparing Sample Population by Age

Case ID	Percentage Representation						
	Total	18-24	25-35	36-45	46-54	55-64	65+
#1	100	0	34	37	21	8	0
#2	100	9	9	32	27	23	0
#3	100	17	17	33	8	25	0

The comparison and contrast of the grade demographic for the sample populations of all three case studies is depicted in table 4-19.

Table 4-19: Comparing Sample Population by Grade

Case ID	Percentage Representation				
	Total	Executive Management	Senior Management	Team Leader	Team Member
#1	100	8	8	18	66
#2	100	9	18	27	46
#3	100	17	33	17	33

Table 4-19 conveys a strong representation of all the grades. Case studies #1 and #2 show a healthy split across each of the categories, with representation akin to that of the alliance; i.e. a larger proportion of the sample population is represented by the team members, which is representative of the overall alliance populations for each case study.

This enables the final demographic to be summarised, the entities that form the engineering alliances for the case studies, as shown in table 4-20.

Table 4-20: Comparing Sample Population by Entity

Case ID	Percentage Representation							
	Total	Consultant 1	Consultant 2	Designer 1	Designer 2	Contractor 1	Contractor 2	Client
#1	100	53	-	26		11	-	11
#2	100	45	-	5	23	-	27	-
#3	100	25	58	-	-	0	-	17

Table 4-20 shows case studies #1 and #3 have the client present within the engineering alliance, and that case study #2 does not. This can be explained by case study #2 being a joint partnership and therefore a legal entity without the need for the client to be present. Table 4-20 also depicts that case study #3 does not have contractor representation; this was because the contractor declined to participate in the research. It should be noted that Consultant 1 is representative

of the same organisation, whilst all the other descriptions do not refer to the same organisation in each case study. Nine organisations participated in the research with varying contributions to the sample populations.

4.2 Structuring the Data Analysis

The data analysis was structured to analyse the data against the findings of the literature review, and in particular against the four defined elements of the employee engagement model for engineering alliances. These elements form the starting point of the analysis and were earlier described as:

1. Meaningfulness (Kahn, 1990) can be positively coupled with leadership style (Macleod and Clarke, 2009), the concept of control and workload (Maslach and Leiter, 2008) and the challenge and autonomy (Xu and Cooper-Thomas, 2011).

2. Availability (Kahn, 1990) can be positively coupled with employee voice (MacLeod and Clarke, 2009), the concept of recognition and reward (Maslach and Leiter, 2008) and self-confidence (Xu and Cooper-Thomas, 2011).

3. Safety (Kahn, 1990), can be positively coupled with integrity (Macleod and Clarke, 2009) fairness and community (Maslach and Leiter, 2008) and the interactions with one another (Xu and Cooper-Thomas, 2011).

4. Organisational commitment (Scholl, 1981), can be positively coupled with employee behaviours (Scholl, 1981) and the inter-relationships from the human perspective (Jambekar, 1995) that form the three psychological conditions (Kahn, 1990), leading to enhanced learning and career paths through a better understanding of the engineering alliance and its constituent partners' roles.

4.3 Meaningfulness

Meaningfulness (Kahn, 1990) was defined as the psychological meaning to be in work (i.e. a purpose). The literature review yielded that meaningfulness can be positively coupled with leadership style (Macleod and Clarke, 2009), the concept of control and workload (Maslach and Leiter, 2008) and the challenge and autonomy (Xu and Cooper-Thomas, 2011) to form the components of affective engagement (Gennard and Judge, 2010). The element of meaningfulness was tempered by findings that were embedded in autonomy and leadership; a common theme that was present throughout the analysis of meaningfulness. The literature review yielded that meaningfulness is generated through a series of relationships between co-workers and/or between co-workers and managers and is built over time (Saks, 2006). It further revealed that these relationships are built upon the emotional attachment of autonomy (Xu and Cooper-Thomas, 2011) whereby case study #1, via data collected through interviews reported that the engineering alliance was operating with a flat structure, proffering:

> *"It is a flat structure here…it was more of a get on and do it approach…we were happy to crack on and get things done…" [Case Study #1, Interviewee 2, Client]*

This suggested a relaxed approach to getting the work done and inferred that employees felt there was a high level of autonomy within the team because the flat structure enabled them to get on with their jobs. This suggests that there is a level of interdependence and co-ordination between employees, which is a best for project success outcome (Mohr and Spekeman, 1994) that is further underpinned by the findings of case study #1; confirming that autonomy is present too, with participants displaying characteristics akin to be being able to get on with their jobs:

> *"We are trusted here to do a job…the steering board is sometimes a little too intrusive but that is to be expected..." [Case Study #1, Interviewee 1, Consultant]*

Case study #1 displays a focus on trust, which is one of the best for project success outcomes (Mohr and Spekeman, 1994). There is evidence of an early rapport forming between employees and managers and the realisation of interdependence and co-ordination between them demonstrating a further indication of best for project success outcomes being present. The best for project success outcome of interdependence and communication is evidenced through employees' recognition of the steering board's need to be intrusive and the intrusive nature suggests that there is communication present, as evidenced by case study #3;

"Steering board is far too intrusive" [Case Study #3, Focus Group]

This level of communication is not clear and the quality of communication has not been disclosed; however the assumption that there is an understanding of the steering board role and acceptance of that role, which infers that communication must be acceptable to the employees. Having established the best for project success factors of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994) were present within individual autonomy, it was possible to examine if employees' considered autonomy to be present within their team, as shown in table 4-21.

Table 4-21 shows nil responses for case study #2. It was not possible to ascertain if autonomy was present or not within case study #2 and therefore complete the process of triangulation with case study #1. This was however deliberate in the design of the data collection as it was discovered during the pilot questionnaire that it was not possible to reflect if there was a high level of autonomy within the alliance. The reason for not pursuing the data collection was due to the pilot responses' suggesting it was not possible to answer the question, thus rendering the data to be of no purposeful use.

Table 4-21 further depicts a feeling of high autonomy within case study #1. The overall population cited 94% as feeling a high level of autonomy within the alliance but the female population suggested there was not a high level of autonomy within the alliance.

Table 4-21: Autonomy – Is there a high level of autonomy within your team?

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		94% Yes	Nil
Gender	Male	100% Yes	Nil
	Female	100% No	Nil
Age	18-24	-	Nil
	25-35	100% Yes	Nil
	36-45	83% Yes	Nil
	46-55	100% Yes	Nil
	56 – 64	100% Yes	Nil
Grade	Executive Management	-	Nil
	Senior Management	100% Yes	Nil
	Team Leader	100% Yes	Nil
	Team Member	89% Yes	Nil
Entity	Consultant	90% Yes	Nil
	Designer 1	100% Yes	Nil
	Designer 2		Nil
	Contractor 1	100% Yes	
	Contractor 2		Nil
	Client	100% Yes	

This trend continued to be present within the age-group demographic of 36-45, the team member demographic and the consultant demographic. There are no significant outliers regarding the response to autonomy; this suggests that the theme of autonomy is present and further triangulated through interviews conducted for case study #1, whereby a theme of working together in an autonomous manner was considered to be present:

"You think from an alliance point of view…rather than parent company…that is to some extent unavoidable" [Case Study #1, Interviewee 2, Client]

Further examination of the statement 'that is to some extent unavoidable' post interview revealed that thinking as an alliance is seen as autonomous in thinking and unavoidable because:

"We have to work together to deliver the project…thinking as an alliance means we don't need to be told how to think or what to say but that at times can be challenging" [Case Study #1, Interviewee 1, Consultant]

"We all knew what the workload looked like and who was doing what" [Case Study #1, Interviewee 2, Client]

This suggests that the best for project success outcomes of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994) are present. This assumption is based upon employees acknowledging that they 'need to work together', a form of interdependence and co-ordination, which is further underpinned by 'not having to be told how to think', which is a form of trust. The element of communication is perhaps not wholly present, but the suggestion here is that by 'not being how to think or what to say' infers that communication is present; the inference is weak but the concept of 'at times can be challenging' suggests that communication is present, but perhaps not always as much as the employee would like. There is a further assumption, that because the employees knew 'who was doing what', that communication is present because the 'workload' would have needed to have been communicated in the first instance.

The analysis suggests that autonomy is present within an engineering alliance that has a flat structure, i.e. not overly hierarchical. This analysis suggested that the best for project success outcomes of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994) are present within autonomy. This is true for engineering alliances that have a flat organisational structure and would need to be evaluated against an engineering alliance that had a hierarchical structure to determine if employees still felt they had autonomy, i.e. would this be a challenge to employees. Whilst this was not explored within this thesis, the element of challenge (Xu and Cooper-Thomas, 2011) was analysed with respect to autonomy (Xu and Cooper-Thomas, 2011) within a flat organisational structure.

The element of challenge within the engineering alliance was present within all three case studies. The interviews yielded themes of challenge relating to the working environment, whilst the questionnaires identified themes regarding the employee's career trajectory whilst the observations yielding specific challenges around relationships in the early formation of the alliance. Building on from the autonomy element, it is possible to establish through case study #1 that employees view the engineering alliance as:

"It's been challenging…there are major teething problems" [Case Study #1, Interviewee 1, Consultant]

This was a common theme throughout the interviews and the root cause of this challenge was attributed to:

"There are different types of cultures to think about" [Case Study #1, Interviewee 5, Consultant]

"They have high expectations…..they underestimated the workload…..it caused problems" [Case Study #1, Interviewee 1, Consultant]

With respect to the best for project success outcomes of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994), it could be viewed that the major teething problems of the different types of cultures suggest that co-ordination and communication between the participating organisations and their employees is not present, even within an operational alliance that is seven years old. The extant literature suggested that there is a need to blend organisational cultures (Rahman and Korn, 2010; Herman et al., 2007) and this supports the theme of a clear recognition that alliances are made up of differing cultures proffered by the participating organisations. However, there are some negative trends that have been demonstrated in case study #1, which suggests that the challenges within an engineering alliance run deeper than the blending of cultures. The interviewees argued that the challenge also lay within personal relationships, citing:

"You could tell they didn't like dealing with you…they were trying to pass the ball when it came to taking responsibility or if a mistake had occurred" [Case Study #1, Interviewee 7, Consultant]

"They [Management] have high expectations…..they underestimated the workload…..it caused problems" [Case Study #1, Interviewee 1, Consultant]

This response demonstrated an anti-thesis towards the best for project success outcome of trust (Mohr and Spekeman, 1994), whereby the respondent cites a lack of trust and blame apportionment. There is also an element of interdependence being present but not necessarily working at its optimum; the respondent cited 'you could tell they didn't like us' which inferred that personal relationships were strained. This was further underpinned by case study #3, which suggested that personal relationships could be strained by the manner through which the employee joined the alliance, with a common theme suggesting;

"I was told to come here" [Case Study #3, General Observation]

This observation suggests that not everyone is participating in the alliance because they want to and therefore there is a personal challenge to change the thinking or to try and exit the alliance. This does not align well with the best for project success factor of communication; it purports that the employee was instructed to participate within the engineering alliance and it is further tempered by the concept that communication is not present via case study #3 and the observation that employees complained of:

"I have not heard from my parent company for three months, which is from day one of joining this alliance" [Case Study #3, General Observation]

This apparent lack of communication with the parent company demonstrates that the best for project success factor of communication is not being achieved, even

in the early formation of an alliance. Further observations yielded that this lack of communication was leading employees to challenge their personal career trajectory, with participants identifying concerns that they were:

"Worried my career is over at the parent company…" [Case Study #3, General Observation]

This notion of worrying about career trajectory in essence was describing a breakdown in the potential goodwill of employees' (Adler and Kwon, 2002). If the employee persists in worrying about the status of their career and the impact that participating within an alliance can have upon this, then they are less likely co-ordinate their efforts with fellow employees and the best for project success outcome of co-ordination is not necessarily achieved. It may be observed whether this concern is offset by analysing if employees had received a promotion during their time with the alliance, and therefore conform that the personal challenge is present within the engineering alliance; a notion further supported through the emphasis placed upon the employee's career trajectory in support of the observation:

"Worried my career is over at the parent company…" [Case Study #3, General Observation]

Table 4-22 depicts this specific challenge by inquiring if the employees received a promotion during their time within the alliance. Table 4-22 data depicts that 82% of the total population did not receive a promotion during their time within the engineering alliance for case study #1; with case study #2 proffering an outcome that 55% of the total population did not receive a promotion. This differential between both case studies continues across all of the demographic categories, but there are positive exceptions embedded within case study #2. These positive exceptions apply to the age group demographics 25-35, 36-45 and 46-55 who all reported receiving a promotion in the range of 50 to 67% of the population. Furthermore the senior management and team leaders in the grade demographic reported positive responses within the range of 50 to 83%. Within the entity demographic, we can see that contractor and designers

received promotions within the range of 67 to 100%. This is in stark contrast to case study #1, where the greater Likert response indicated that promotions were not as easy to achieve. With respect to the 'best for project success outcomes', it is evident that promotions were not that easy to achieve and further analysis was required to ascertain if individual excellence was easily recognised by line managers; such that the 'best for project success outcome' of interdependence could be satisfied.

Table 4-22: Challenge – Did you receive a promotion in job status during your time within the engineering alliance?

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		82% No	55% No
Gender	Male	77% No	53% No
	Female	100% No	60% No
Age	18-24	-	100% No
	25-35	77% No	50% Yes
	36-45	79% No	57% Yes
	46-55	88% No	67% Yes
	56 - 64	100% No	80% No
Grade	Executive Management	100% No	100% No
	Senior Management	100% No	50% Yes
	Team Leader	57% No	83% Yes
	Team Member	84% No	70% No
Entity	Consultant	70% No	70% No
	Designer 1	100% No	60% No
	Designer 2		100% Yes
	Contractor 1	100% No	
	Contractor 2		67% Yes
	Client	75% No	

The data gathered then explored if individual excellence was easily recognised by the line manager, as shown in table 4-23. Recognition of individual employee excellence was considered to be easy amongst the sample populations for both case studies, which suggested that employees' relationships with their managers supported interdependence being present. There is a differential to this within case study #2, which suggested that the female population in its entirety found it

"difficult" to have their individual excellence recognised. Further examination of this result, suggested that the sample population had been in the same role for a number of years and had been denied promotion on a number of occasions, owing to their capabilities not exceeding their current role. The age group demographic of 36-45 had a majority of 75% return a response of "difficult", also. Whilst some of this can be attributed to the female demographic, the majority of this age group did enjoy a promotion.

Table 4-23: Challenge – How individual excellence is recognised by the line manager

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		37% Easily	38% Easily
Gender	Male	45% Easily	45% Easily
	Female	86% Very Easily	100% Difficult
Age	18-24	-	-
	25-35	54% Easily	50% Easily
	36-45	36% Very Easily	75% Difficult
	46-55	38% Very Easily	67% Easily
	56 – 64	67% Easily	50% Easily
Grade	Executive Management	100% Very Easily	100% Neutral
	Senior Management	67% Very Easily	50% Easily
	Team Leader	43% Easily	67% Difficult
	Team Member	44% Easily	50% Easily
Entity	Consultant	45% Easily	50% Difficult
	Designer 1	70% Very Easily	50% Easily
	Designer 2		-
	Contractor 1	75% Very Easily	
	Contractor 2		67% Easily
	Client	50% Easily	

Table 4-23 further depicts the team leader demographic also reporting difficulty in demonstrating their individual excellence, and these demographic also enjoyed promotions within the alliance. The consultant demographic found it "difficult" to demonstrate their individual excellence and the majority did not receive a promotion. This suggests that interdependence is not always present and it can be an on-going success factor throughout the lifecycle of the alliance.

This can be traded off against whether the employee felt they had individual importance within the engineering alliance and whether that importance contributed towards the 'best for project success factors'.

Individual importance, relative to case studies #1 and #2 is depicted in table 4-24, shown on page 92. Table 4-24 indicates a similar theme for individual importance when compared to individual excellence. The differentials when comparing the two case studies reside in the same demographics. Employee importance is recognised by line managers and felt by the employees'. This suggests a high level of interdependence between employees' and line managers and underpins the concept that both individual excellence and importance are therefore important to achieving the 'best for project success outcomes'.

Table 4-24: Challenge – How individual importance to the team is recognised by the line manager

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		34% Very Easily	38% Neutral
Gender	**Male**	42% Easily	45% Neutral
	Female	86% Very Easily	100% Difficult
Age	**18-24**	-	-
	25-35	38% Easily	50% Easily
	36-45	36% Very Easily	75% Difficult
	46-55	38% Very Easily	67% Easily
	56 - 64	67% Easily	75% Neutral
Grade	**Executive Management**	100% Very Easily	100% Neutral
	Senior Management	67% Very Easily	100% Neutral
	Team Leader	57% Easily	67% Difficult
	Team Member	36% Easily	50% Easily
Entity	**Consultant**	40% Easily	50% Neutral
	Designer 1	70% Very Easily	100% Easily
	Designer 2		-
	Contractor 1	75% Very Easily	
	Contractor 2		33% Very Easily
	Client	50% Easily	

The analysis identifies that challenge is an important element of employee engagement and that it needs to be addressed on three levels: working environment, career trajectory and relationships. The 'best for project success outcomes' of trust, interdependence, communication and co-ordination (Mohr and Spekeman, 1994) are evidenced within this element, but there is still a need to identify how these elements can change within an engineering alliance. It was possible to analyse the data findings to determine if the levels of workload (Maslach and Leiter, 2008) will lead to the employee feeling undervalued and having less importance and excellence within the engineering alliance. The element of workload is considered an anti-thesis to positive employee engagement and in particular whether the employee feels that they are in control of the workload. Case study #1 revealed that interviewee respondents proffered an underlying theme that was related to the expectation management of the line managers by citing:

"They [line managers] have high expectations…they underestimated the workload…it caused problems" [Case Study #1, Interviewee 1, Consultant]

Here there was a strong theme developing that line management were unaware of the workload, what it entailed, who and how it was being delivered. It suggests that the 'best for project success outcomes' could be compromised and that communication was not as strong as it could be. There is further concern that employees cited an underestimation of the workload, which proffers a lack of co-ordination between employees and line managers. It is further tempered through the by-product of 'problems were being caused' by the lack of co-ordination and communication, which leads to a breakdown in the interdependence of one another. This is further tempered via case study #1, whereby it was stated that:

"We [the employees] all knew what the workload looked like and who was doing what" [Case Study #1, Interviewee 2, Client]

This response determines that the co-ordination of workload was not widely understood, with differing views between the employees and line managers. In

order to understand this breakdown of co-ordination, it was possible to analyse case study #1 in more depth via questionnaires. It should be noted that case study #2 was not analysed because the respondents within this sample population felt that the narratives and memories of workload were not lucid enough to provide reliable evidence for this thesis. The concept of a veridical account was dismissed, based on the lack of reliability, validity and utility of the account within the research; participants simply felt that they could not give an unbiased account. Case study #3 did not provide enough robust evidence to support the analysis of workload, owing to the fact it was an engineering alliance that was still in its formative stages and that the programme for delivery had not yet commenced fully.

The questionnaire of case study #1 enabled the workload element to be assessed against three specific areas; the ability to plan time management, the frequency of meetings attended and whether the meetings are deemed appropriate. These three specific areas were developed to analyse if the employees felt in control of the workload and whether this control, or lack of, would have a detrimental impact upon achieving the 'best for project success outcomes'. Table 4-25 depicts the responses to these specific workload elements.

Table 4-25 infers a population of 79% who did not feel they can adequately plan their time within the alliance. This supports the concept that workload is not necessarily understood. It is noteworthy to point out that 100% of the executive management demographic concur that they are unable to plan their time within the alliance, yet only 67% of the senior management felt the same. The team leader demographic returned the highest percentage of the sample population who felt they were unable to plan their time management. This suggests varying levels of interdependence between the different demographics and does not lend itself to achieving the 'best for project success outcomes'.

Table 4-25: Workload – Assessing Case Study #1 Workload Elements

Demographic	Sub Demographic	Able to Plan Time Management	The Frequency of Meetings Attended	Meetings Are Deemed Appropriate
Total Population		79% No	37% Regularly	58% Yes
Gender	Male	74% No	45% Regularly	68% Yes
	Female	100% No	86% Infrequently	71% No
Age	18-24	-	-	-
	25-35	77% No	38% Regularly	77% Yes
	36-45	71% No	36% Frequently	43% Yes
	46-55	88% No	38% Regularly	50% Yes
	56-64	100% No	67% Regularly	67% Yes
Grade	Executive Management	100% No	100% Frequently	100% No
	Senior Management	67% Yes	67% Frequently	100% No
	Team Leader	86% No	57% Regularly	57% Yes
	Team Member	80% No	36% Regularly	72% Yes
Entity	Consultant	80% No	45% Regularly	75% Yes
	Designer 1	90% No	50% Infrequently	70% No
	Contractor 1	75% No	50% Frequently	100% No
	Client	50% No	50% Frequently	100% Yes

A further theme developed with respect to reasons leading to the inability to plan time efficiently. Much of this was deemed to correlate with the time spent attending meetings. The sample population reported frequent or regular attendance at meetings, with the leadership demographics reporting the highest attendance at meetings and the female demographic the lowest attendance. The female demographic could be attributed to the type of work that is undertaken by the female population, with many of them in supporting functions as opposed to delivery functions. When the sample population were questioned about whether the amount of meetings was appropriate, there were mixed responses. Whilst the sample population complained they were unable to plan their time due to the amount of meetings they were attending, 58% of the population reported that the meetings were deemed appropriate. This may suggest there is a 'disconnection'

between the two themes and this could be related to the control element of meaningfulness.

The element of workload appears to surface as an important element within an employee engagement model for an engineering alliance because of the perceived 'disconnection' between the employees and the line managers about the levels of workload and who is doing what. The analysis depicts that the employees does not always feel in control of the workload within the engineering alliance and this was analysed further under the element of control whereby the data was analysed to ascertain if control plays a role within engineering alliances.

The element of control will need to be underpinned by the 'best for project success factor' of trust (Mohr and Spekeman, 1994). However, in order to determine if trust was present, the anti-thesis of conflict was analysed, given that conflict is harmful to co-ordination and performance (Langfred, 2007a). The lack of understanding of workload can lead to the employee feeling undervalued (Maslach and Leiter, 2011) and this is depicted by the line manager's response to workload control and understanding. Case study #1 depicted a breakdown in the relationship between the employees and line managers, with interview participants proffering:

"It then swiftly changed and you could see the atmosphere change…the management were keeping things close to their chest" [Case Study #1, Interviewee 1, Consultant]

"The power seemed to get less and less….then you would get frosty communication" [Case Study #1, Interviewee 4, Consultant]

This view suggested that the 'best for project success outcomes' of trust were now in jeopardy; employees were growing suspicious of the line manager's response through 'frosty communication' being perceived as power. Other 'best for project success factors', such as communication are also portrayed as not being present; with interview participants stating that management were keeping things close to their chests. This in turn suggests that interdependence between

employees and line managers is also at risk, mainly because of uncertainty and inconsistency (Hawkins and Little, 2011a: 2011b) within the engineering alliance and the workload in particular; that is to say there is uncertainty over the control of workload.

The lack of uncertainty regarding workload was also present within case study #3, even though it was an engineering alliance that was in its early formation. Employees were acutely aware that the workload was not fully determined within this engineering alliance and they were being deployed on to a project that therefore had uncertainty and inconsistency (Hawkins and Little, 2011a:2011b) within it. In this instance, participants proffered that:

> *"I was told to come here…I am being kept in the dark" [Case Study #3, General Observation]*

The first part of this observation identifies a theme of an employee being deployed on to a project with little or no say in the matter. This is further tempered by the later statement that infers the employee is being kept in the dark, proffering a sense of not understanding why they are here, i.e. they are not in control of their workload, its variety or alignment to their aspirations. With respect to the 'best for project success outcomes', there is an inference that co-ordination and communication are not yet present. This is further tempered by the concept that the efficiency and effectiveness of employees (Andersen, 2010; Miller and Ross, 2003; Clardy, 2008) has also not been considered; i.e. deploying employees on to an engineering alliance where the workload has yet to be identified does not make sense and leads to the employee feeling undervalued because they have not been communicated to correctly regarding why they are participating in the engineering alliance. This identifies that the notion of communication for 'best for project success outcome' has not been achieved.

A lack of communication surrounding who employees actually work for can also contribute to the uncertainty and inconsistency (Hawkins and Little, 2011a: 2011b) within the engineering alliance. Whilst it is not

directly linked to the control of workload, it has links to how the workload is split between the participating organisations within the engineering alliance and whether there is any overlap that could lead to future conflict within the engineering alliance. The sample populations of case study #1 and case study #2 were asked to choose if they worked for their parent company, the alliance, both or neither.

Table 4-26 describes the sample population responses to the question and reveals an eclectic mix of responses. In comparing the two case studies, it is evident that case study #2 shows a sample population that believes it works for an alliance. This was an expected outcome because case study #2 is a joint venture that operates specifically in this way. Case study #1 suggested that employees felt they worked directly for the parent organisation rather than the alliance. This again was expected because case study #2 was a partnership, a loose formal arrangement. One notable difference is that the executive management demographic in case study #1 reported that they felt they worked for neither the alliance nor the parent organisation. Furthermore, the client demographic reported a feeling they worked for both the alliance and the parent organisation. Given that the client is the owner-participant, this outcome was not expected.

With respect to the best for project success outcomes, it is evident that employees are cognisant of the interdependence and co-ordination required within a joint venture. However, it is less so within a partnership, with employees preferring to recognise their own parent organisation. Whilst this outcome is expected, it proves that there is not a 'one size fits all' approach that can be used to develop an employee engagement model. However, the caveat to this is that the style and type of leadership (Macleod and Clarke, 2009) within the engineering alliance can underpin the element of meaningfulness.

Table 4-26: Control – Defining Who I Work For

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		45% Parent Company	36% Alliance
Gender	Male	48% Parent Company	35% Parent Company
	Female	71% Neither	60% Alliance
Age	18-24	-	100% Alliance
	25-35	38% Both	50% Parent Company
	36-45	79% Parent Company	43% Alliance
	46-55	50% Neither	33% Parent Company
	56 - 64	67% Parent Company	60% Alliance
Grade	Executive Management	100% Neither	100% Alliance
	Senior Management	67% Parent Company	75% Parent Company
	Team Leader	100% Parent Company	50% Alliance
	Team Member	32% Parent Company	50% Alliance
Entity	Consultant	60% Parent Company	50% Alliance
	Designer 1	60% Neither	60% Alliance
	Designer 2		100% Parent Company
	Contractor 1	100% Neither	
	Contractor 2		50% Parent Company
	Client	50% Both	

Leadership is generated through a series of meaningful relationships over a period of time (Saks, 2006). The engineering alliance, in order to succeed, will need an environment of trust and openness (Morwood et al., 2008). This environment of trust and openness can have an impact upon the elements of 'autonomy and challenge' (Xu and Cooper-Thomas, 2011) and 'workload and control' (Maslach and Leiter, 2008) and it is proffered that strong leadership can optimise the meaningfulness element (Macleod and Clarke, 2009). It is through this optimisation of meaningfulness that the 'best for project success outcomes' can be determined. The interviews of case study #1 proffered a division between managers and team members, whereby the root cause of this division appeared to be a lack of understanding of the employees' workload and how they deliver the work. This led to a theme of:

"He [line manager] knows nothing about my job…. I'm just going to ignore him" [Case Study #1, Interviewee 1, Consultant]

"It tells me they are not committed to what I am doing" [Case Study #1, Interviewee 6, Client]

With respect to the 'best for project success outcomes', these statements imply that there is no trust between the employee and the line manager. It depicts a relationship that has a breakdown in communication because they do not understand each other, and a breakdown in the interdependence of one another. It does not depict an authentic leadership style, because there appears to be no trust and openness (Morwood et al., 2008) and there appears to be no dependability or credibility (Lamothe and Lamothe, 2011) in the relationship between the employee and line manager; this is evidenced by the fact that the employee intends to ignore the line manager and feels there is a lack of commitment. This is not considered to be a relationship whereby authentic leadership is present; the breakdown in the relationship suggests that a directed leadership style is present. However, this is not necessarily true, there are elements of authentic leadership being present in autonomy and challenge, whereby trust was considered to be in existence and employees felt valued and the challenge was acceptable.

The concept of control and workload that was discussed earlier suggests that there is little openness and trust and that employees are being led by directed leaders. The observations of case study #3 confirm this:

"You felt like you were being kept out of certain things and being kept in the dark" [Case Study #3, Focus Group]

This infers a directed leadership style, whereby the leaders did not trust the employees and therefore kept them in the dark about certain things. This style of leadership will lead to uncertainty and inconsistency (Hawkins and Little, 2011a: 2011b) within workload and control, because the

assumption of being left in the dark infers that instructions are being issued as and when the leaders feel the employee needs them.

The concept of being kept in the dark depicts that the 'best for project success factors' of trust and communication are not being optimised. It is possible to determine if the other success factors of interdependence and co-ordination are being achieved by analysing the visibility of the leadership within the engineering alliance.

The analysis of meaningfulness (Kahn, 1990) depicts that the psychological meaning to be in work, (i.e. a purpose) can be coupled with leadership style (Macleod and Clarke, 2009) and that this style of leadership is important to the engineering alliance with respect to the 'best for project success outcomes' of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994). The style of leadership is mixed, it is not necessarily authentic, nor is it directed all of the time, but at a specific moment in the alliance lifecycle it can be either one. This change in leadership style is brought about by conflict, which appears to surround itself around the level of workload and the control of that workload; it is further underpinned by a lack of understanding regarding workload. This lack of understanding is underpinned by the positive coupling of leadership style (Macleod and Clarke, 2009) with the concept of control and workload (Maslach and Leiter, 2008). This positive coupling yields a more directed leadership style being present as conflict grows around workload and the employees' control over the workload. Leadership style (Macleod and Clarke, 2009) also positively couples with challenge and autonomy (Xu and Cooper-Thomas, 2011), with the leadership style generally representing itself as authentic. The openness and trust creation of an organisational structure that enables employees to undertake the delivery of their work without hindrance from line management, lends its self positively to the achievement of the 'best for project success factors'. The challenge surrounding career trajectory appeared, at face value, to derail the notion that meaningfulness could be used as a component within an employee engagement model, but the authentic leadership style appeared to transgress the shortcoming.

Table 4-27 depicts the level of leadership visibility within the alliance. The general consensus of opinion is that leadership visibility was very high within case study #2, with the exception of the age group demographic 18-24. Further review of the data suggested that there was little or no interaction between the leaders and this age group demographic. Case study #1 yielded no visibility for the female population, the designer demographic and the team leader demographic. Further inspection of these demographics also suggested little or no interaction with the leadership. Case study #3 would appear to support these findings through:

"Weak leadership was present" [Case Study #1, Interviewee 4, Consultant]

The analysis of meaningfulness (Kahn, 1990) depicts that the psychological meaning to be in work, (i.e. a purpose) can be coupled with leadership style (Macleod and Clarke, 2009) and that this style of leadership is important to the engineering alliance with respect to the 'best for project success outcomes' of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994). The style of leadership is mixed, it is not necessarily authentic, nor is it directed all of the time, but at a specific moment in the alliance lifecycle it can be either one. This change in leadership style is brought about by conflict, which appears to surround itself around the level of workload and the control of that workload; it is further underpinned by a lack of understanding regarding workload. This lack of understanding is underpinned by the positive coupling of leadership style (Macleod and Clarke, 2009) with the concept of control and workload (Maslach and Leiter, 2008). This positive coupling yields a more directed leadership style being present as conflict grows around workload and the employees' control over the workload. Leadership style (Macleod and Clarke, 2009) also positively couples with challenge and autonomy (Xu and Cooper-Thomas, 2011), with the leadership style generally representing itself as authentic. The openness and trust creation of an organisational structure that enables employees to undertake the delivery of their work without hindrance from line management, lends its self positively to the achievement of the 'best for project success factors'. The challenge surrounding career trajectory appeared,

at face value, to derail the notion that meaningfulness could be used as a component within an employee engagement model, but the authentic leadership style appeared to transgress the shortcoming.

Table 4-27: Leadership – Describing the Leadership Visibility

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		39% Very	45% Very
Gender	**Male**	45% Very	47% Very
	Female	71% Not At All	40% Very
Age	**18-24**	-	100% Not At All
	25-35	38% Neutral	100% Very
	36-45	43% Very	43% Very
	46-55	38% Very	67% Very
	56 - 64	67% Very	40% Extremely
Grade	**Executive Management**	100% Very	100% Extremely
	Senior Management	33% Extremely	50% Very
	Team Leader	43% Not At All	50% Very
	Team Member	40% Very	50% Very
Entity	**Consultant**	45% Very	50% Very
	Designer 1	80% Not At All	60% Very
	Designer 2		100% Extremely
	Contractor 1	50% Very	
	Contractor 2		33% Extremely
	Client	75% Very	

Meaningfulness (Kahn, 1990) can be depicted as positive coupling of leadership style (Macleod and Clarke, 2009), the concept of control and workload (Maslach and Leiter, 2008) and challenge and autonomy (Xu and Cooper-Thomas, 2011). The fusing together of these components forms affective engagement (Gennard and Judge, 2010) but there is a need to consider the changes in leadership style and the drivers that enforce those changes when developing the employee engagement model for engineering alliances. However, leadership is present in other elements of employee engagement and should be considered within those elements as an underpinning driver; whether it is an authentic or directed leadership style, the style of leadership will always influence

the engineering alliance and in turn, the achievement of the 'best for project success factors' of trust, interdependence, co-ordination and communication. This assumption is based upon how these different leadership styles have affected them within the meaningfulness analysis.

4.4 Safety

The second element of safety (Kahn, 1990) is defined as employees feeling psychologically safe in their work, (i.e. to have job security). The literature review yielded that safety (Kahn, 1990), can be positively coupled with fairness and community (Maslach and Leiter, 2008) and the interactions with each another (Xu and Cooper-Thomas, 2011) to form the components of social engagement (Gennard and Judge, 2010).

The element of safety is underpinned by the development of a community within the alliance, which is further tempered by the element of leadership from meaningfulness. The analysis identifies that case study #1 employees describe a community as:

"Ultimately it binds people together [Case Study #1, Interviewee 8, Client]……people can use relationships to move things along" [Case Study #1, Interviewee 6, Client]

This concept of binding people together infers a network of professionals who have 'come together' (Ropes, 2009) and those relationships are formed and in existence. This also aligns with the 'best for project success outcomes' of interdependence and co-ordination (Mohr and Spekeman, 1994) via the binding of people together; there is recognition by employees that they come together to achieve an outcome, as evidenced by the use of relationships to move things along. This theme of using relationships is further underpinned by the by case study #1 participants who identified that a community enables:

"Building relationships and communication is much easier" [Case Study #1, Interviewee 3, Consultant]

"You happen to have a common goal rather than a common interest"

[Case Study #1, Interviewee 1, Consultant]

This infers that the building of relationships within a community by employees is made easier because of the community. The inference is that employees are seeking to build relationships between themselves (Adler and Kwon, 2002) to transcend the cultural barriers between organisations. Recalling that meaningfulness identified a clear understanding of the different cultures within the engineering alliance, it is an important finding because it demonstrates that employees have identified the need to communicate; this is evidenced by positive narrative regarding building relationships and underpins the 'best for project success outcome' of communication within the engineering alliance community.

The engineering alliance community is founded upon relationships, which is based upon a shared understanding or meaning (Ropes, 2009). This shared understanding or meaning is evidenced within case study #3, whereby employees were observed to discuss:

"Interesting to see how others operate" [Case Study #3, Ethnography]

"Feels collaborative in places" [Case Study #3, Focus Group]

The concept of seeing how others operate infers there is an opportunity to learn from others within the community. This learning may be underpinned by the building of knowledge (Ropes, 2009) and is further underpinned by employees being prepared to cooperate together (Adler and Kwon, 2002) to achieve this. This willingness to cooperate is evidenced through employees' recognition of relationships and the feeling of collaboration. This willingness to cooperate is further tempered by case study #3, whereby employees proffer that:

"It is possible to learn from others" [Case Study #3, Focus Group]

"There may be better ways of doing things" [Case Study #3, Auto Ethnography]"

This concept of learning, when viewed as knowledge exchange, from others evidences the 'best for project success outcomes' of interdependence and co-ordination. There is an open-minded approach, demonstrated by employees recognising that there may be other ways of doing things. This open mindedness demonstrates there a 'loose goodwill' to cooperate (Adler and Kwon, 2002) and a less tangible alignment with the 'best for project success outcome' of co-ordination. This less tangible alignment was analysed more closely through case studies #1 and #2 and determining how easy it was for employees' to acquire new information within the engineering alliance. The definition of information relates to knowledge, but was reworded to information, as participants understood this better than knowledge during the pilot test of the questionnaires. This concept of learning, and linking it to determining how easy it is to acquire new information within the alliance, is depicted in table 4-28.

Table 4-28: Community – Rating How Easy It Was/Is to Acquire New information Within the Engineering Alliance

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		39% Easily	50% Neutral
Gender	**Male**	45% Easily	50% Neutral
	Female	71% Very Easily	100% Difficult
Age	**18-24**	-	-
	25-35	38% Easily	50% Easily
	36-45	43% Easily	33% Easily
	46-55	38% Very Easily	67% Neutral
	56 - 64	67% Easily	50% Neutral
Grade	**Executive Management**	100% Very Easily	100% Neutral
	Senior Management	67% Very Easily	50% Neutral
	Team Leader	71% Easily	67% Neutral
	Team Member	40% Easily	60% Easily
Entity	**Consultant**	55% Easily	50% Neutral
	Designer 1	70% Very Easily	100% Neutral
	Designer 2		-
	Contractor 1	100% Very Easily	
	Contractor 2		67% Easily
	Client	75% Easily	

Table 4-28 shows a positive response for case study #1 and #2 learning from one another through the acquisition of new information for case study #1. Case study #2 displays a different set of responses, with a neutral response. This could be attributed to the fact that this alliance was a joint venture and as such, there was no need to learn from one another because the alliance was a legal entity in its own right. With the exception of one outlying response, it appears that knowledge exchange is present within engineering alliances and that it can be achieved because employees would be starting from a neutral perspective. This is evidenced from the earlier findings of open mindedness and the inquisitive nature of seeing how others do things. This concept of seeing how others operate and a community exchanging knowledge requires the community to be defined as an engineering alliance.

Case study #1 describes the community as a grouping of employees by citing:

"Everybody was grouped together in a little office...if we split into our own companies it would be a lot easier to be influenced by your own company" [Case Study #1, Interviewee 1, Consultant]

This statement describes a social community (Adler and Kwon, 2002) that proffers the need to for all participating organisations to be grouped together in one office, which supports the concept of professionals coming together to exchange and build knowledge (Ropes, 2009). The 'best for project success outcomes' of trust, interdependence, co-ordination and communication are not evidenced directly here but there is a need to establish what is meant by 'easier to be influenced by your own company' as this can have an impact upon them.

Further examination within case study #1 of the influencing of an employee's parent organisation suggested close synergies with meaningfulness and the notion of workload, control and the outcome of conflict. Initially employees proffered that:

"If there is a lot of work, the partners work together more closely" [Case Study #1, Interviewee 8, Client]

When the analysis was undertaken for meaningfulness condition (Kahn, 1990), the anti-thesis to this statement was presented, which suggests there are synergies around workload within an engineering alliance. Within the safety condition, the concept of workload defines the harmonious operation of the community, impacting upon the successful achievement of the 'best for project success factors' of trust, interdependence, co-ordination and communication. The assumption suggests there is a lot of work to be delivered and that all employees are busy delivering that work, then the community will work together more closely and achieve the 'best for project success outcomes' with the meaningfulness condition proffering the anti-thesis. Recalling that the meaningfulness condition proffered the blending of cultures (Rahman and Korn, 2001; Herman et al., 2007), this is also present within the safety condition. Case study #1 proffered that a harmonious community is not always present, citing:

"There are quite clearly different company cultures in the partnership" *[Case Study #1, Interviewee 7, Consultant]*

"….adapt to the culture that suited at the time…" [Case Study #1, Interviewee 3, Consultant]

Whilst these statements are understood from a meaningfulness condition, the concept of culture blending needs to be further examined from a safety condition. Further examination revealed that case study #1 suggested that the blending of cultures was not always achieved due to members of the community who demonstrated that:

"They don't want to work as closely with other people really" [Case Study #1, Interviewee 5, Consultant]

"We've never been fully appreciated" [Case Study #1, Interviewee 2, Client]

If there is a belief that employees do not want to work together, then the community can be considered to be in disharmony and this infers that the 'best for project success outcomes' will not be achieved, tempered by the belief that some employees did not feel 'fully appreciated'; the inference that disharmony is not present because the employee feels under appreciated. Further examination of these statements revealed that the reasons people did not want to work together was due to workload, which underpinned the feeling of under appreciation because those feeling underappreciated were in control of work scope allocation. It was attributed to employees having to compete for work to remain busy, which supports the concept that workload can have an impact upon the community and create conflict.

The creation of conflict as a result of workload and its impact upon the harmonious operation of the engineering alliance community can be evidenced by ascertaining if conflict is present within an engineering alliance, the frequency of conflict and whether that conflict is due to workload. Case studies #1 and #2 were analysed to ascertain if this assumption holds true. Table 4-29 depicts if conflict was present within the community.

Table 4-29 depicts that conflict was present between partners. The majority of respondents supported this within both case studies. Particularly, in case study #2, the majority of the sample population reported conflict being present within the alliance. This was not expected because this alliance was a legal entity in its own right and was operating as an individual company. Case study #1 presented a different set of responses. Whilst the response was consistent with a yes, the majority was less within the sample population when compared to case study #2. The age group demographic 46-55 also presented a lower return of perceiving there to be conflict amongst the partner organisations.

Further examination of this identifies that this age group perceived it to be normal practice within an engineering alliance and therefore a normal characteristic of the community.

Table 4-29: Conflict Between Partners

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		68% Yes	86% Yes
Gender	Male	61% Yes	94% Yes
	Female	100% Yes	64% Yes
Age	18-24	-	100% Yes
	25-35	77% Yes	50% Yes
	36-45	79% Yes	71% Yes
	46-55	38% Yes	100% Yes
	56 – 64	67% Yes	100% Yes
Grade	Executive Management	100% Yes	100% Yes
	Senior Management	67% Yes	75% Yes
	Team Leader	80% Yes	83% Yes
	Team Member	60% Yes	90% Yes
Entity	Consultant	55% Yes	70% Yes
	Designer 1	90% Yes	100% Yes
	Designer 2		100% Yes
	Contractor 1	75% Yes	
	Contractor 2		100% Yes
	Client	75% Yes	

In essence, this age group were suggesting that conflict is present but it is normal and should not be identified as an abnormal characteristic of the community or the alliance. This view can be tempered by analysing the frequency of conflict, as shown in table 4-30.

Table 4-30 depicts that conflict occurs frequently or regularly within each of the case studies. The range of responses offered to respondents in the questionnaire was 5 within a Likert scale, which proffers the optimum response to be relatively low. It can be seen that case study #2 proffers frequent conflict across much of its demographics, with the outliers proffering conflict as an often occurrence. Case study #1 proffers that conflict is a more regular occurrence, which underpins the notion that it is a normal characteristic of alliances.

Table 4-30: Frequency of Conflict Between Partners

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		50% Regularly	42% Frequently
Gender	Male	63% Regularly	38% Often
	Female	71% Regularly	100% Frequently
Age	18-24	-	100% Frequently
	25-35	40% Regularly	100% Frequently
	36-45	55% Regularly	40% Frequently
	46-55	33% Regularly	50% Frequently
	56 – 64	100% Regularly	80% Often
Grade	Executive Management	100% Regularly	100% Often
	Senior Management	100% Often	67% Frequently
	Team Leader	67% Regularly	60% Frequently
	Team Member	40% Regularly	33% Frequently
Entity	Consultant	55% Regularly	57% Often
	Designer 1	44% Regularly	60% Frequently
	Designer 2		100% Frequently
	Contractor 1	67% Regularly	
	Contractor 2		50% Frequently
	Client	67% Infrequently	

It was then possible to determine if this regular characteristic of conflict was due to the parent organisations protecting their workload and therefore their turnover and profit. Table 4-31 depicts the responses from the questionnaires.

Table 4-31 depicts that this conflict is present due to parent organisations protecting their workload. This is especially true for case study #2, whilst case study #1 depicts a more distributed response across the Likert Scale for this question.

The community element of the safety condition for employee engagement within an engineering alliance is important. The analysis determines that employees are prepared to work together to achieve the 'best for project success outcomes' but that willingness is dependent upon workload. Where the workload is plentiful and employees are busy, the community is harmonious and cooperating together; the anti-thesis is present when the condition of workload is less

plentiful. The engineering alliance should be viewed as a social community (Adler and Kwon, 2002) with shared human resources (Chung et al., 2006; Johnston and Staughton, 2009; Luo and Deng, 2009) who are reliant on workload being plentiful so that the exchanging and building of knowledge (Ropes, 2009) can be achieved. If this is not, conflict will occur and this will damage the cooperation within the community. However, it is important to ensure that the workload is fair and that employees do not feel they are being exploited (Luo, 2008) by high levels of workload.

Table 4-31: Conflict Due to Parent Organisations Protecting Workload

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		42% Don't Know	63% Yes
Gender	**Male**	42% Yes	56% Yes
	Female	71% No	100% Yes
Age	**18-24**	-	100% Yes
	25-35	50% Don't Know	100% No
	36-45	45% Yes	40% Yes
	46-55	33% Yes	50% Yes
	56 – 64	50% Yes	100% Yes
Grade	**Executive Management**	100% Yes	100% Yes
	Senior Management	100% Yes	67% Yes
	Team Leader	50% Don't Know	60% Yes
	Team Member	53% Don't Know	56% Yes
Entity	**Consultant**	45% Yes	86% Yes
	Designer 1	78% Don't Know	100% Yes
	Designer 2		100% No
	Contractor 1	67% Yes	
	Contractor 2		33% Yes
	Client	33% Yes	

The concept of fairness within the engineering alliance community incorporates how employees and organisations interact with one another (Xu and Cooper-Thomas, 2011) and whether there is integrity present within those interactions. The analysis continues with the theme of workload as this is now starting to demonstrate a prominent role within the engineering alliance and

within the psychological conditions of meaningfulness and safety (Kahn, 1990). Case study #1 proffers that:

"There is a lot of territory and body protection in the alliance" [Case Study #1, Interviewee 8, Client]

This definition of territory and body protection does not represent a harmonious community being present and infers that there is not necessarily a level of fairness in the relationships between participating organisations. This level of fairness relates to a willingness to cooperate together (Sanders and Schyns, 2006) and that the 'best for project success outcomes' of interdependence and co-ordination are not necessarily present. This is evidenced by case study #1 citing that:

"…they [other partners] are trying to get advantage…rather than working towards one goal…" [Case Study #1, Interviewee 8, Client]

This apparent presence of partner organisations trying to gain advantage over one another as opposed to working towards one goal identifies that the community can be become less harmonious in its operation; there is a lack of clarity in determining why each partner is trying to get an advantage over the other, and this can lead to blame (Arino and Ring, 2010; Tan and Ching, 2012). The reason for the lack of clarity and blame for trying to gain an advantage over one another is tempered by case study #1 reporting:

"Workscope fighting at senior level…. With visible power struggles" [Case Study #1, Interviewee 8, Client]

The idea that employees can see these types of behaviours being present and that leaders are engaged in power struggles over workscope can be perceived as unfair, especially if the reasons for this occurring are unknown, misunderstood or a combination of both. The concept of workscope is explained as the work

detailed to each entity within the alliance. Case study #1 determines that the workscope fighting can be attributed to:

"…there are different objectives for each of the alliance partners…"
[Case Study #1, Interviewee 4, Consultant]

This view of having different objectives and not working towards one common goal can contribute towards the community not perceiving a level of fairness regarding work scope. If there are different objectives present within the engineering alliance community then the community is not harmonious and the 'best for project success outcomes' of trust, interdependence, co-ordination and communication are not being achieved. However, case study #3 proffers that:

"Relationships are still forming" [Case Study #3, General Observation]

This infers that workscope fighting could be perceived by those participating within the engineering alliance as the engineering alliance attempt to work together to determine how workload can be split fairly amongst the partner organisations. This still supports the concept that there is conflict presence within the engineering alliance community and case study #3 proffers that:

"Conflicting views on same subject matter" [Case Study #3, Focus Group]

This may suggest that the 'best for project success factors' of trust, interdependence, co-ordination and communication are still forming and that the interactions between partner organisations at this stage of the engineering alliance lifecycle are still forming. Fairness between partner organisations therefore is dependent upon what stage of the engineering alliance lifecycle a person is engaged in. If the engineering alliance is starting up and is in early formation, interactions can be heated but also viewed as working towards a positive outcome that lends itself to defining clarity and therefore removing any blame. Conversely, if the alliance is established and in a mature state, then

fairness is considered to be present when the workload is well established and less so when the workload is less established.

The interaction between employees within the engineering community has been described by case study #3 as:

"Feeling of collaborative in places" [Case Study #3, Focus Group]

The concept of feeling collaborative infers that the community is interacting positively with one another and these positive interactions, according to case study #1 will lead to:

"….a broadened the knowledge and expertise of the team…" [Case Study #1, Interviewee 1, Consultant]

These interactions may imply that the alliance community is harmonious and there is a willingness to cooperate in the spirit of learning from one another. It purports a sense of clarity and understanding that through collaboration, the engineering alliance community will achieve the 'best for project success' outcomes of interdependence and co-ordination; that is to say that collaboration is essentially underpinned by interdependence and co-ordination. However, the outcomes of trust and communication, with respect to fairness and community, are not always fully optimised or achieved. The interviewees of case study #1 suggest that by trying to interact with other employees, the following occurred;

"….we made big strides to improve relationships…we would get people together and take them out for a drink…but the barriers were never full broken down" [Case Study #1, Interviewee 3, Consultant]

This displayed a positive approach to interaction through a social setting but there was a feeling that barriers were never broken down. These barriers were perceived in the following way:

"I think they are not as close as they could be…..some of the personalities….they are not interested in working with other companies" [Case Study #1, Interviewee 5, Consultant]

The concept of not wanting to work with other companies was assessed against the trust element of safety. Within the community, there was an underlying trend that trust underpins the level of interactions within the community. The interviewees of case study #1 suggested that the community had a sense of employees earning trust, and this was demonstrated by:

"I think on a personal level they trust you….but you have to prove yourself" [Case Study #1, Interviewee 7, Consultant]

This concept of proving yourself was tempered by the observation of case study #3, whereby employees felt in the early stages of the alliance community forming that they felt as if they were:

"Being kept in the dark" [Case Study #3, Focus Group]

This however related to the relationship between employees as team members and the managers of the alliance. This growing concept of trust and its representation as a unit of measure between an employee and line managers is representative of integrity; suggesting that integrity is based upon words and deeds (Fritz et al., 2013) and how employees can demonstrate those words and deeds towards their line manager. Table 4-32 depicts how easily employees found it to demonstrate their integrity to their line managers.

Table 4-32 shows that within case study #1, demonstrating integrity was easy to achieve whereas in case study #2 it was perceived as much more difficult to achieve. Team members generally found it difficult to demonstrate integrity, which underpins the concept of being kept in the dark. Being kept in the dark suggests that credibility (Davis and Rothstein, 2006) between the line managers and the employees has yet to be established.

Table 4-32: Trust – How Easy It Is/Was To Demonstrate Integrity to Your Line Manager?

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		45% Easily	38% Difficult
Gender	**Male**	52% Easily	36% Neutral
	Female	71% Very Easily	50% Easily
Age	**18-24**	-	-
	25-35	54% Easily	50% Easily
	36-45	36% Very Easily	75% Difficult
	46-55	38% Very Easily	33% Very Easily
	56 - 64	67% Easily	50% Neutral
Grade	**Executive Management**	100% Very Easily	100% Neutral
	Senior Management	67% Very Easily	50% Neutral
	Team Leader	71% Easily	33% Very Easily
	Team Member	48% Easily	50% Difficult
Entity	**Consultant**	55% Easily	50% Difficult
	Designer 1	70% Very Easily	-
	Designer 2		50% Very Easily
	Contractor 1	75% Very Easily	
	Contractor 2		67% Easily
	Client	75% Easily	

This lack of established credibility will impact upon the 'best for project success outcome' of trust; which suggests that with respect to the safety condition, trust needs to be defined within an engineering alliance. The definition of trust within case study #1 was described as:

> *"It ultimately comes down to how individuals get on with each other"*
> *[Case Study #1, Interviewee 11, Designer]*

This concept of how well individuals get on with one another identifies that there is clarity within the relationships if they get on well and if they do not there is blame (Arino and Ring, 2010, Tan and Ching, 2012). Recalling that the engineering alliance community is harmonious where workload is plentiful, it is evident that trust levels between employees is also high, as evidenced by case study #1 interviewees, who cited that they were:

"…quite happy to crack on and get things done...didn't worry about the paper work" [Case Study #1, Interviewee 2, Client]

This statement demonstrates that employees are cooperating and that the 'best for project success' outcomes of trust, interdependence and coordination are present, but it does not suggest that communication is present. However, further inspection through case study #1 yielded that:

"….you're almost trusted to do your job….the management is there if you need support…" [Case Study #1, Interviewee 1, Consultant]

This suggests that trust is present but it has to be earned, which underpins integrity in its most basic form of principles and values (Davis and Rothstein, 2006) and that these form the engineering alliance community. There is however, a concern that relates to trust and credibility with case study #1 reporting that employees feel as though:

"We've never been fully appreciated" [Case Study #1, Interviewee 2, Client]

This concept of appreciation, or the lack of it, infers that there could be a level of unfairness within the engineering alliance. This feeling of never being fully appreciated could lead to a lack of clarity within the employee's role within the engineering alliance, as evidenced by case study #3, citing:

"No idea why I am here" [Case Study #3, General Observation]

"No idea why he is here" [Case Study #3, Focus Group]"

This appears to suggest that the engineering alliance community is not harmonious and that the 'best for project success outcomes' of interdependence and co-ordination are not being achieved due to a lack of understanding. This lack of understanding is underpinned by a lack of clarity within the role itself but

this is not the reported outcome for case study #1, whereby employees reported that:

"I'm here to do a quality job; I have a clear brief…to do a quality job"
[Case Study #1, Interviewee 3, Consultant]

In order to determine if these values underpin trust within the engineering alliance community, the level of individual excellence was examined; this is shown in table 4-33, shown on page 119.

Table 4-33 shows that case study #1 employees found it easy to demonstrate their individual excellence, and in turn their values to their line manager.

Table 4-33: Values - How Easy It Is/Was To Demonstrate Individual Excellence to Your Line Manager?

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		37% Easily	38% Easily
Gender	Male	45% Easily	45% Easily
	Female	86% Very Easily	100% Difficult
Age	18-24	-	-
	25-35	54% Easily	50% Easily
	36-45	36% Very Easily	75% Difficult
	46-55	38% Very Easily	67% Easily
	56 - 64	67% Easily	50% Easily
Grade	Executive Management	100% Very Easily	100% Neutral
	Senior Management	67% Very Easily	50% Easily
	Team Leader	43% Easily	67% Difficult
	Team Member	44% Easily	50% Easily
Entity	Consultant	45% Easily	50% Difficult
	Designer 1	70% Very Easily	50% Very Easily
	Designer 2		-
	Contractor 1	75% Very Easily	
	Contractor 2		67% Easily
	Client	50% Easily	

Case study #2 reported it to be very difficult within the age group demographic 36-45, with 75% of respondents citing it very difficult to demonstrate individual excellence and values. Overall, the findings suggest that the community does enable individual excellence and values to be demonstrated easily, which suggests that the community is comfortable that their individual excellences can be demonstrated to the leadership. Furthermore it suggests that there is trust present as the individuals, i.e. the employees feel that the leadership allows them to demonstrate their individual excellence and be recognised.

Safety is an important psychological condition (Kahn, 1990) within employee engagement in engineering alliances through employees feeling psychologically safe in their work, (i.e. to have job security). This analysis determines that safety is underpinned by defining the engineering alliance as a social community (Adler and Kwon, 2002; Maslach and Leiter, 2008). This social community needs to be developed into a community that is underpinned by fairness (Maslach and Leiter, 2008). The concept of fairness is a perception of the level of workload within the alliance and this is related to the meaningfulness psychological condition (Kahn, 1990) through the level of workload and the conflict that can bring.

The interactions between employees (Xu and Cooper-Thomas, 2011) are evidenced through integrity and the ability to build trust and credibility between employees and line managers. There is evidence of a lack of clarity in the understanding of employee roles, especially in the early formation of an engineering alliance, and this will need to be addressed if social engagement (Gennard and Judge, 2010) is to be achieved. There is evidence of social engagement within the engineering alliance community, with employees attempting to break down the cultural barriers outside of the community setting. By linking to the meaningfulness condition and the identification of an authentic leadership style, we can envisage that the engineering alliance community will be built upon transparency. This transparency is enhanced through the safety psychological condition, where trust plays an important role.

The development of an employee engagement model will need to ensure that clarity is present within the engineering alliance community. It cannot rely on leadership style and the evolution of an engineering alliance community alone. Consideration should be given to the employee and how they can interact with both the leadership and community operation of the engineering alliance. This can be achieved by analysing the availability psychological condition (Kahn, 1990).

4.5 Availability

Availability is the third of Kahn's (1990) psychological conditions and is concerns the employees psychologically making themselves available for work (i.e. perform the role). The literature reviewed suggested that the psychological condition of availability (Kahn, 1990) can be positively coupled with 'employee voice' (MacLeod and Clarke, 2009), the concept of recognition and reward (Maslach and Leiter, 2008) and self-confidence (Xu and Cooper-Thomas, 2011) to form the components of intellectual engagement (Gennard and Judge, 2010).

The concept of availability is underpinned by the need for authentic leadership, as demonstrated within the meaningfulness psychological condition and the presence of a social community, as demonstrated by the safety psychological condition. The concepts of authentic leadership and the social community are further underpinned by the degree of employee voice within the engineering alliance. Case study #1 reported that employee voice was not that prevalent within the community and that the leadership made decisions irrespective of employee voice. The employees discussed that the leadership act with the following behavioural characteristics;

> *"They say well we are going to do this....they've decided it is the best thing to do......from their point of view" [Case Study #1, Interviewee 2, Client]*

This infers that the 'best for project success outcomes' of communication and trust are also not present. This suggests that communication is one way (Marginson, et al., 2010) and not inclusive of the employees, which also

demonstrates a lack of authentic leadership; it also suggests that trust is lacking (Morrison, 2011) because the leaders are operating in a directed leadership style, which infers that employees are told what to do. In addition to this, it also suggests that the line managers are choosing not to hear employee words (Avery et al., 2012) and proceeding under their own ideas. Case study #1 further supports this argument through:

"Even if we said we shouldn't be doing this….we'd always carry on and follow the last instructions" [Case Study #1, Interviewee 7, Consultant]

This statement infers that the employees would continue to work within the social community environment and work towards the 'best for project success outcomes' of interdependence and co-ordination. It suggests that employee voice has been dismissed or employees have perhaps made discretionary comments (McClean et al., 2013) leading to the dissatisfaction with the current status quo (Burris et al., 2012; McClean et al., 2013). However, employees within the same sample population proffered a more positive statement regarding employee voice, citing:

"They are being listened to and when they say something, change is possible" [Case Study #1, Interviewee 3, Consultant]

This statement infers a more positive outlook on employee engagement and that employees are having a say in the community and developing its identity and culture, which supports the concept of how things can be improved (Gennard and Judge, 2010). It also suggests that managers view the employee voice to be critical to the engineering alliances performance (Morrison, 2011). The idea that employees are being listened to suggests there is a two-way conversation (Marginson et al., 2010) and that the 'best for project success factor' of communication has been evidenced. However, this concept of being listened to had an anti-thesis within case study #3, with employees proffering that:

"I haven't heard from parent company since I joined the alliance [Case Study #3, General Observation]… that was three months ago...there is no sign of my manager approaching me any time soon [Case Study #3, Auto Ethnography]"

Whilst this is considered to be an alliance it is early formation, i.e. it is in an immature state, it depicts a strong disconnect between the employee and their parent company. It also depicts that there is not a two-way communication process (Marginson et al., 2010) present wither within the engineering alliance or between the employee and their parent organisation. This lack of engagement can be linked to the concept of recognition; i.e. the employee feels that they are not being recognised for their efforts within the engineering alliance or the social community. It is possible to explain that three months is not enough time to develop recognition because it takes time to establish relationships, as evidenced by case study #3:

"Relationships still forming" [Case Study #3, Focus Group]

However, the concept of recognition should not be dismissed because of the length of service within the engineering alliance. It is possible to consider that this lack of recognition will lead to emotional distress for the employee (Brun and Dugas, 2008). Further examination of this lack of recognition suggested that the environment that the employee is working within can have an effect upon the 'best for project success outcomes'. Both meaningfulness and safety psychological conditions alluded to the need to develop an honest and transparent environment through authentic leadership. However, case study #3 reports that during the relationships forming phase, the emotion of the community alliance was said to be:

"Politically Charged" [Case Study #3, General Observation]

"Empire Building" [Case Study #3, General Observation]

Further analysis of this observation within case study #3 and case study #1 suggests that the politically charged atmosphere was borne out of partner organisations and employees alike, attempting to establish themselves within the alliance community, i.e. they were seeking to make themselves recognised within the alliance, potentially through the creation of an empire; an organisation within an organisation. Case study #1 proffered that the leadership within the alliance community had an understanding of recognition and attempted to overtly address this by stating:

"He understood....everybody is in this and everyone needs a little bit of the pie" [Case Study #1, Interviewee 1, Consultant]

This level of recognition suggests that the alliance community is formed and that the leadership recognises what is needed to make the alliance a success. Whilst recognition works at the organisation level, it does not always work between employees and managers. Case study #1 proffers that employees recognise that:

"I'm not sure we've ever been fully appreciated" [Case Study #1, Interviewee 2, Client]

Deeper analysis of this statement through the questionnaire responses of case studies #1 and #2 was then performed.
Table 4-34 determines if the sample populations have received a bonus payment during their time within the alliance.

Table 4-34 depicts that the majority (>50%) of case study #2 received a bonus payment during their time within the alliance with the age group demographic 18-24 reporting 100% of the sample population not receiving a bonus payment. Similarly, both of the designer demographics reported majority of the sample population not receiving a bonus payment either. The remainder of the demographics all reported majority responses of receiving a bonus payment. This in itself reveals recognition of the efforts of the employees within the alliance. In contrast, case study #1 presents a much-reduced majority of the

sample population receiving a bonus payment. The age group demographics of 25-35 and 46-55 reported that they did not receive a bonus payment, as did 60% off the team member demographic. In contrast to case study #2, all of the entity demographics reported a majority of the sample populations receiving a bonus payment.

Table 4-34: Recognition – Have You Received A Bonus Payment During Your Time Within the Alliance?

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		55% Yes	77% Yes
Gender	Male	65% Yes	82% Yes
	Female	86% No	60% Yes
Age	18-24	-	100% No
	25-35	54% No	50% Yes
	36-45	71% Yes	86% Yes
	46-55	63% No	83% Yes
	56-64	67% Yes	100% Yes
Grade	Executive Management	100% Yes	100% Yes
	Senior Management	67% Yes	75% Yes
	Team Leader	86% Yes	83% Yes
	Team Member	60% No	70% Yes
Entity	Consultant	55% Yes	80% Yes
	Designer 1	50% Yes	60% No
	Designer 2		60% No
	Contractor 1	50% Yes	
	Contractor 2		100% Yes
	Client	75% Yes	

Deeper analysis of recognition beyond financial award was also studied within case studies #1 and #2, as shown in table 4-35.

Table 4-35 depicts that the majority of the sample population did not enjoy a promotion during their time within the alliance, suggesting that recognition was much harder to come by in this format than that of a bonus payment. The theme of the questionnaires suggests that the age group demographics of 36-45 and 46-55, in both case studies, received promotions. The same theme occurred in

the grade demographic for team leaders and senior management. Within the entity demographic, consultants and designers generally did not receive promotions but contractors and the client did. These findings suggest that recognition is demonstrated by bonus payments rather than career progression.

Table 4-35: Recognition – Have You Received A Promotion During Your Time Within the Alliance?

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		63% No	55% No
Gender	Male	61% No	53% No
	Female	71% No	60% No
Age	18-24	-	100% No
	25-35	69% No	50% Yes
	36-45	57% Yes	57% Yes
	46-55	88% Yes	67% Yes
	56-64	67% No	80% No
Grade	Executive Management	100% No	100% No
	Senior Management	67% Yes	50% Yes
	Team Leader	57% Yes	83% Yes
	Team Member	68% No	70% No
Entity	Consultant	65% No	70% No
	Designer 1	60% No	60% No
	Designer 2		100% Yes
	Contractor 1	100% No	
	Contractor 2		67% Yes
	Client	75% Yes	

The length of service within the alliance, for its employees, was then analysed to determine if employees remain with the alliance for a sustained period of time and it identifies when employees should leave the alliance in pursuit of other career options, as shown in table 4-36.

Table 4-36 depicts that the case study #1 sample population have been in post for five or more years and they reported that the maximum length of service should be no more than two to three years in duration. This identifies that recognition is not a great factor in the availability characteristic because the employees have remained within the alliance for a sustained period of time, in

excess of what they suggest is a maximum length of service within the alliance. This infers that the employees are happier to receive bonus payments over career progression, but it also suggests that employees may have asked to leave the alliance but may not have been allowed to do so. It was not possible to ascertain data for this; the pilot questionnaires returned responses that this question would not be answered for fear of reprisal, and interviewees also declined to answer the question on the grounds that it may impact upon their future career within the alliance.

Table 4-36: Recognition – Assessing Case Study #1 Recognition Components

Demographic	Sub Demographic	How Long Have You Worked In The Alliance	What Is the Maximum Length of Service
Total Population		45% 5+	31% 2-3
Gender	**Male**	35% 5+	39% 2-3
	Female	86% 5+	71% 1-2
Age	**18-24**	-	-
	25-35	31% 1	33% 1-2
	36-45	57% 5+	29% 1-2
	46-55	50% 5+	29% 1-2
	56-64	67% 5+	67% 2-3
Grade	**Executive Management**	100% 2-3	100% 2-3
	Senior Management	77% 3-4	67% 1-2
	Team Leader	86% 5+	57% 2-3
	Team Member	40% 5+	27% 1-2
Entity	**Consultant**	35% 5+	44% 5+
	Designer 1	90% 5+	50% 2-3
	Contractor 1	50% 2-3	50% 1-2
	Client	50% 3-4	33% 2-3

It was then possible to examine if recognition was linked to reward and the concept of reward within the alliance community was then analysed. Case study #3 generated a theme of:

"I have a job for three years if I keep my nose clean" [Case Study #3, General Observation]

"This role could be the making of me" [Case Study #3, General Observation]

This theme was consistent with the recognition theme pertaining to the length of service within the alliance and suggested that employees recognised the reward of job security within the alliance. It depicts that the employee is motivated by the opportunity to progress and remain with the alliance, which suggests that they will seek to maintain their effectiveness (Manzoor, 2012) within the engineering alliance. In essence, the employee is seeking an intrinsic motivation level of self-actualisation (Salie and Schlechter, 2012) through the identification that the 'job could be the making of me'. This is further evidenced through case studies #1 and #2 via the questionnaire respondents and how many employees attained long term job security. Table 4-37 depicts the responses and suggests that long-term job security can be attained within the alliance.

Table 4-37: Reward – Have You Attained Long Term Job Security

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		55% Yes	50% Yes
Gender	**Male**	68% Yes	53% No
	Female	100% No	60% Yes
Age	**18-24**	-	100% No
	25-35	54% No	50% Yes
	36-45	57% Yes	57% No
	46-55	50% Yes	67% Yes
	56-64	100% Yes	80% No
Grade	**Executive Management**	100% Yes	100% No
	Senior Management	100% Yes	50% Yes
	Team Leader	71% Yes	83% Yes
	Team Member	60% No	60% No
Entity	**Consultant**	55% Yes	80% No
	Designer 1	50% Yes	80% Yes
	Designer 2		100% Yes
	Contractor 1	75% Yes	
	Contractor 2		67% Yes
	Client	50% Yes	

Table 4-37 depicts discrepancies when comparing and contrasting demographics and case studies. Deeper analysis, post questionnaire, into case study #1 revealed that long term job security had been achieved, it just was not within the same role and this therefore provided an ambiguous return within the questionnaire response.

The attainment of long term job security was considered to be demonstrative of the 'best for project success outcomes' of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994) with the employee citing:

"I don't want to be doing this in two years' time" Case Study #3, General Observation]

The interviews proposed a different type of reward, suggesting that training was considered to be a reward. Case study #1 proffered that:

"Quite a few people in this organisation have done well career wise……" [Case Study #1, Interviewee 2, Client]

This infers that there is an intrinsic motivation and a desire to generate intellectual capital (Koszewski, 2009) and this is further underpinned the employees' desire to undertake training, as shown in table 4-38. Both sample populations reported adequate training provision was provided. Whilst the concept of reward appears to be present, further analysis was made regarding the self-confidence of the employee and a lack of recognition and reward would lead to emotional distress (Brun and Dugas, 2008), such that the employee does not make themselves available for work (Gennard and Judge, 2010).

Table 4-38: Reward – Have You Received Adequate Training Provision

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		71% Yes	64% Yes
Gender	Male	81% Yes	53% Yes
	Female	71% No	100% Yes
Age	18-24	-	100% Yes
	25-35	69% Yes	50% No
	36-45	86% Yes	86% Yes
	46-55	50% Yes	50% Yes
	56-64	67% Yes	60% No
Grade	Executive Management	100% No	100% No
	Senior Management	67% Yes	50% No
	Team Leader	100% Yes	83% Yes
	Team Member	72% Yes	70% Yes
Entity	Consultant	95% Yes	50% Yes
	Designer 1	60% No	60% Yes
	Designer 2		100% Yes
	Contractor 1	100% No	
	Contractor 2		83% Yes
	Client	100% Yes	

Case study #3 yielded that employees felt low self-confidence when it came to their own career, with their main concerns focussing upon:

"Worried my career is over at the parent company" [Case Study #3, General Observation]

This view was further tempered by assessing self-confidence within case study #1. Table 4-39, shown on page 131, suggested that employees were not actively looking for a promotion; those who were looking for a promotion were in the minority. Of those that were looking for a promotion, there was a strong belief that their manager was supporting them, but they still felt it was unachievable within the alliance.

Table 4-39: Self Confidence – Assessing Case Study #1 Self Confidence Components

Demographic	Sub Demographic	Are You Looking For A Promotion	Are You Being Supported By Your Line Manager	Do You Feel It Is Achievable in the Alliance
Total Population		82% No	71% Yes	57% No
Gender	Male	77% No	71% Yes	57% No
	Female	100% No	-	-
Age	18-24	-	-	-
	25-35	77% No	100% Yes	67% Yes
	36-45	79% No	67% Yes	67% Yes
	46-55	88% No	100% Yes	100% No
	56-64	100% No	-	-
Grade	Executive Management	100% No	-	-
	Senior Management	100% No	-	-
	Team Leader	57% No	67% No	100% No
	Team Member	84% No	100% Yes	75% Yes
Entity	Consultant	70% No	67% Yes	50% Yes
	Designer 1	100% No	-	-
	Contractor 1	100% No	-	-
	Client	75% No	100% Yes	100% No

The psychological condition of safety (Kahn, 1990), described as the employee psychologically making themselves available for work (i.e. perform the role) is dependent upon employee voice (Macleod and Clarke, 2009) being present within the engineering alliance. The analysis identifies that recognition and reward alone (Maslach and Leiter, 2008) will not pacify employees because they need to feel they are contributing towards the engineering alliance community and that their voices are being heard. If this is not the case then employees will experience low self-confidence and this will have an impact upon the best for project success outcomes. If the element of training is ignored, employees will not feel they have achieved intellectual engagement (Gennard and Judge, 2010) and this will also need to be considered within the development of an employee engagement model for engineering alliances.

4.6 Understanding

Understanding is not a psychological condition but it is concerned with the alliance element of employee engagement. The literature review yielded that understanding, under the umbrella of organisational commitment (Scholl, 1981), can be positively coupled with employee behaviours (Scholl, 1981) and the inter-relationships from the human perspective (Jambekar, 1995) that form the three psychological conditions (Kahn, 1990), leading to enhanced learning and career paths through a better understanding of the engineering alliance and its constituent partners roles. In particular, this part of the analysis fuses the psychological condition of meaningfulness with authentic leadership, safety with community and availability with employee voice and analyses the contribution that 'understanding' can make to the 'best for project success outcomes' of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994). The analysis begins by determining if employees have an understanding of an engineering alliance. Case study #1 identified that the word informal is used to describe an engineering alliance, proffering that an engineering alliance is:

"An informal partnership of organisations in order to achieve a common outcome" [Case Study #1, Interviewee 1, Consultant]

This understanding of an alliance aligns with the concept that alliances are an informal arrangement between two or more organisations (Chung et al., 2006; Johnston and Staughton, 2009; Luo and Deng, 2009) and it also confirms that the engineering sector use partnerships as the preferred alliancing arrangement. Given this theme of partnership and informality throughout the case study #1 interviews, it is possible to conclude that there is a basic understanding of what an engineering alliance is. The use of the term common outcome does not lend itself to the achievement of the 'best for project success outcomes', and further analysis is required to determine if the 'best for project success outcomes' can be evidenced through employees understanding of engineering alliances.

Deeper analysis through case study #1 identifies that employees proffer an engineering alliance to be:

"A number of businesses coming together to work as one project or one organisation, with common goals, objectives that ensure the project is delivered" [Case Study #1, Interviewee 10, Designer]

This definition of an engineering alliance determines that the term partnership is describing participation of organisations collaborating to achieve the 'best for project success factors' to achieve the objective of profit and turnover (Judge and Dooley, 2006). There is inference that the coming together of the partner organisations to work as one project or one organisation can underpin the safety psychological condition of a community. There is further inference that the 'best for project success outcomes' of co-ordination and interdependence are present, or at least understood, through employee acknowledgement that the partner organisations come together to form one organisation. In essence, it can be concluded that employees have a basic understanding of an engineering alliance, but there is still no conclusion pertaining to whether employees consider there to be trust and openness between the partner organisations.

It was possible to determine the alliance types further through case studies #1 and #2 and the questionnaire responses. Table 4-40 on page 134 depicts the responses to questions pertaining to the alliance type for each case study. There is a suggestion that the overall total population supports a complimentary working arrangement between alliance partners. This complimentary working arrangement infers that the 'best for project success outcomes' of interdependence, co-ordination and communication is present because there is recognition of one another's role within the engineering alliance. This suggests that the basic understanding of an engineering alliance is more robust than first thought. However, when comparing the male population we can see that through a reflective lens, over 40% of the life expired alliance perceive the working relationship to be of a collision in nature, whilst the current alliance still supports a complimentary working arrangement. With respect to both case studies, it is clear that the female population perceive engineering alliances to be of a collisions nature description. It is also clear that within the age group demographics, the consensus of opinion is divided between both complimentary

and collisions alliance working arrangements. This pattern continues through to the grade demographic and also into the entity demographic.

Table 4-40: Defining the Engineering Alliance

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		29% Complimentary	29% Complimentary
Gender	Male	35% Complimentary	40% Collisions
	Female	57% Collisions	40% Collisions
Age	18-24	-	32% Complimentary
	25-35	38% Collisions	50% Collisions
	36-45	36% Complimentary	43% Collisions
	46-55	33% Collisions	36% Weak
	56 – 64	67% Complimentary	40% Complimentary
Grade	Executive Management	50% Collisions	67% Complimentary
	Senior Management	67% Bootstrap	50% Complimentary
	Team Leader	29% Collisions	50% Weak
	Team Member	36% Collisions	30% Collisions
Entity	Consultant	45% Collisions	60% Complimentary
	Designer 1	60% Weak	60% Collisions
	Designer 2		100% weak
	Contractor 1	75% Complimentary	
	Contractor 2		33% Weak
	Client	50% Bootstrap	

This pattern of complimentary and collisions working arrangements infers an alliance community that is not harmonious all of the time. The previous findings of the meaningfulness, safety and availability psychological conditions within this thesis suggest that the alliance community is not always harmonious and that workload was considered to be the root cause of the harmonious operation of the alliance.

Recalling that the alliance community is underpinned through authentic leadership and the generation of an honest and open community', it is possible to determine if this harmonious arrangement within the alliance community is underpinned by employees perceiving that partner organisations are adopting

partnership thinking. Table 4-41 depicts the findings of case studies #1 and #2 with respect to partnership thinking.

Table 4-41: Understanding the Partnership Thinking

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		37% Agree	36% Disagree
Gender	Male	42% Agree	47% Disagree
	Female	71% Strongly Disagree	60% Neutral
Age	18-24	-	100% neutral
	25-35	31% Strongly Agree	50% Agree
	36-45	50% Disagree	57% Disagree
	46-55	63% Agree	33% Disagree
	56 – 64	67% Disagree	40% Disagree
Grade	Executive Management	100% Disagree	100% Disagree
	Senior Management	67% Neutral	75% Agree
	Team Leader	86% Agree	50% Disagree
	Team Member	36% Disagree	30% Agree
Entity	Consultant	50% Agree	30% Agree
	Designer 1	50% Disagree	30% Agree
	Designer 2		100% Disagree
	Contractor 1	50% Disagree	
	Contractor 2		50% Disagree
	Client	75% Agree	

Table 4-41 depicts a mixed response within the questionnaires, which infers an element of partnership thinking is present within the sample population. There is, however a discrepancy between an engineering alliance that is a partnership and the engineering alliance that is a joint-venture. This does not align with the theory that a joint venture is indeed an equal partnership and therefore partnership thinking should be present. Conversely, with an engineering alliance defined as a partnership, one would expect partnership thinking to be present, albeit in a less formal manner. When the sample population is broken down into the gender demographic it becomes apparent that is a difference between the thinking of males and females. In both case studies it can be seen that the female population tends to exhibit a partnership thinking style, which is the opposite of the male population.

The age-group demographic suggests that the age-group 25 to 35 perceive an engineering alliance to have partnership thinking. This could be attributed to the safety psychological condition (Kahn, 1990) whereby employees within this age group demographic perceive the need to work together to achieve an end goal. The age group 36 to 45 display consistent characteristics that suggest partnership thinking is not present in either type of alliance. This suggests the focus on safety and the need to work together is not that important for this age-group demographic; the same conclusion can also be drawn for the age group demographic 56 to 64. The age-group demographic 46 to 55 displays contrasting characteristics across the two case studies; this may be attributed towards meaningfulness and purpose within the engineering alliance. It can be argued that as the alliance enters into the final stages of its life cycle, partnership thinking is replaced by the need to identify the next work stream.

Executive management disagree there is partnership thinking within the engineering alliance. Further inspection of this suggests that that executive management are focused on acquisition thinking, whereby the focus is on growth within the engineering alliance rather than working together as a team; i.e. the focus is on profit and turnover (Judge and Dooley, 2006; Finlayson, 2011). Senior management depict a positive steer towards partnership thinking, which reflects the need to work together on a daily basis. This is especially present within a joint venture and is tempered by reflection upon a life expired alliance, but for the current alliance, the senior management have a neutral response. This infers that during the lifecycle of the alliance, the senior management adopt a neutral approach throughout the lifecycle of the engineering alliance. There is a discrepancy between the case studies relating to the team leader demographic, with the current alliance agreeing that partnership thinking is strongly present, whilst the life expired case study suggests that partnership thinking was not present. This suggests a reflective analysis based on facts that have occurred at the end of the alliance and an overall position within the alliance, whilst the current alliance is still uncovering facts and events and is representative of thinking to date.

Given this mixture of responses for partnership thinking, it is still not possible to determine if the 'best for project success outcome' of trust has been achieved. The anti-thesis to trust is conflict and previous findings within this thesis suggested that conflict is present, but only when the level and understanding of workload is present. The employees understanding of conflict between partner organisations is shown in table 4-42.

Table 4-42: Conflict Between Partners

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		68% Yes	86% Yes
Gender	Male	61% Yes	94% Yes
	Female	100% yes	64% Yes
Age	18-24	-	100% Yes
	25-35	77% Yes	50% Yes
	36-45	79% Yes	71% Yes
	46-55	38% Yes	100% Yes
	56 – 64	67% Yes	100% Yes
Grade	Executive Management	100% Yes	100% Yes
	Senior Management	67% Yes	75% Yes
	Team Leader	80% Yes	83% Yes
	Team Member	60% Yes	90% Yes
Entity	Consultant	55% Yes	70% Yes
	Designer 1	90% Yes	100% Yes
	Designer 2		100% Yes
	Contractor 1	75% Yes	
	Contractor 2		100% Yes
	Client	75% Yes	

Closer inspection of table 4-42 also suggests that designers perceive there to be higher levels of conflict between partners. This can be attributed towards the multi-disciplinary nature of the activities undertaken by the designers and the pressure of the programme. Designers tend to have highly pressurised relationships that lead to some activities having to be repeated, and this can lead to conflict occurring. Based on this assumption, the frequency of conflict was then analysed further, as depicted in table 4-43.

Table 4-43: Frequency of Conflict Between Partners

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		50% Regularly	42% Frequently
Gender	Male	63% Regularly	38% Often
	Female	71% Regularly	100% Frequently
Age	18-24	-	100% Frequently
	25-35	40% Regularly	100% Frequently
	36-45	55% Regularly	40% Frequently
	46-55	33% Regularly	50% Frequently
	56 – 64	100% Regularly	80% Often
Grade	Executive Management	100% Regularly	100% Often
	Senior Management	100% Often	67% Frequently
	Team Leader	67% Regularly	60% Frequently
	Team Member	40% Regularly	33% Frequently
Entity	Consultant	55% Regularly	57% Often
	Designer 1	44% Regularly	60% Frequently
	Designer 2		100% Frequently
	Contractor 1	67% Regularly	
	Contractor 2		50% Frequently
	Client	67% Infrequently	

Table 4-43 depicts the responses pertaining to the frequency of conflict between partners. Contrasting the two case studies for the sample populations, it can be evidenced that for case study #1, 50% responded that conflict occurred regularly whilst 42% of case study #2 reported that conflict occurred frequently. This appears to suggest that conflict is a regular component of alliances and underpins the perception that engineering alliances could be considered to hold a relationship of "collisions" by this very nature. However, it should be noted that the remainder of the sample populations reported conflict occurring on a less frequent basis, which suggests that engineering alliances may be considered to be complimentary in nature. Table 4-43 depicts that the female sample population identifies that conflict is a common occurrence, but the male sample population of case study #2 reported that conflict frequent. Further inspection of this suggests that the female population observed conflict on a more regular basis because the roles that they held within the alliance exposed them to a higher degree of conflict that they were not necessarily involved in. The age-

group demographic generally reported similar levels regarding the frequency of conflict, as did the grade demographic. The entity demographic actually reported that the client felt conflict occurred infrequently, which is the opposite of what their alliance partners perceived. Further examination of this suggested that conflict was related to alliance partners protecting their core skills within the alliance, as depicted in table 4-44.

Table 4-44: Company Protecting Core Skills

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		47% Adequate	45% Extremely
Gender	Male	55% Adequate	41% Extremely
	Female	86% Neutral	60% Extremely
Age	18-24	-	100% Extremely
	25-35	46% Adequate	50% Adequate
	36-45	43% Adequate	43% Extremely
	46-55	50% Adequate	50% Adequate
	56 – 64	67% Adequate	80% Extremely
Grade	Executive Management	100% Neutral	100% Extremely
	Senior Management	33% Adequate	75% Adequate
	Team Leader	86% Adequate	67% Extremely
	Team Member	44% Adequate	30% Extremely
Entity	Consultant	65% Adequate	40% Extremely
	Designer 1	60% Neutral	60% Adequate
	Designer 2		100% Extremely
	Contractor 1	75% Neutral	
	Contractor 2		50% Extremely
	Client	50% Neutral	

Table 4-44 depicts the concept of alliance partners protecting their core skills. It suggests that the sample populations for both case studies reported extreme or adequate protection of the individual partner's protection of its core skills. This also supports the concept that conflict occurs because of this and requires it to be managed accordingly. The male and female demographic generally align with the concept that participating organisations engage in conflict to protect the core skills of their organisation, but the live alliance suggests that the female sample population are neutral about the concept that conflict is caused by participants

protecting their core skills. The executive management demographic also reported a neutral response to the concept. Further examination of the concept suggests that executive management do engage in conflict to protect core skills. The interesting observation relates to the case study #1 proffering a neutral response regarding participants whilst case study #1 proffers an extremely protective response. This in turn suggests that there may be other underlying issues surrounding conflict within a live alliance, and that the life expired alliance suggests that protecting core skills is the root cause of conflict. The concept of protecting core skills may be associated with participating organisations learning from one another, as depicted in table 4-45.

Table 4-45: Participating Organisations Learn From One Another

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		55% Yes	50% Yes
Gender	**Male**	61% Yes	59% No
	Female	71% No	80% Yes
Age	**18-24**	-	100% Yes
	25-35	77% Yes	50% No
	36-45	57% No	57% No
	46-55	50% Yes	67% No
	56 – 64	67% No	60% Yes
Grade	**Executive Management**	100% No	100% Yes
	Senior Management	100% No	75% Yes
	Team Leader	57% No	83% No
	Team Member	72% Yes	50% No
Entity	**Consultant**	85% Yes	60% Yes
	Designer 1	100% No	80% Yes
	Designer 2		100% No
	Contractor 1	100% No	
	Contractor 2		83% No
	Client	100% Yes	

Table 4-45 depicts that the total sample populations reported a yes response to participating organisations learning from one another. There are conflicting responses within the gender demographic when comparing and contrasting case studies. Case study #1 identifies that the female demographic disagree, whilst a

similar proportion of the female demographic in case study #2 reported that learning between participating organisations was present. A similar finding was present within the male population, but the response trend was reversed. The trend then continues throughout the demographics, with the exception of the age group demographic 36-45 and the grade demographic team leader. Of these two anomalies, the team leader demographic infers that a reflective response that organisations did not learn from one another. This determines that team leaders, who reported the higher levels of frequency of conflict and protection of core skills, do not perceive learning as part of the conflict process.

Further examination of the alternating response when comparing case studies across all demographics yielded that individuals perceived learning to be an individual activity and that when combined within an organisation, contributed towards organisations learning from one another. This is further underpinned by the findings presented in table 4-46, shown on page 142, where the sample populations were asked in training was provided within the engineering alliance.

Table 4-46 depicts that both case studies reported that training was provided, with the male demographic also reporting the same. There is ambiguity within the female demographic, whereby case study #1 reports that training was not provided. This ambiguous finding is also present within the age group demographics of 25-35 and 56-64, as well as the grade demographic senior management. Further examination of the age group demographic 25-35 yielded that training was provided, but the level and frequency of training did not meet the expectations of this age group demographic. A similar finding was also discovered with the female demographic in case study #1, who reported that training was provided if it was deemed to be relevant to the job, and that in many instances training requests had been rejected on that basis. Only one contractor reported that training was not provided and further examination of this also yielded a similar response to the female population. The executive management demographic, in both case studies, reported that training was not provided. This response was expected because executive management are not engaged full-time within the engineering alliance; the provision of governance being the primary role.

Table 4-46: Training Was Provided

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		71% Yes	64% Yes
Gender	**Male**	81% Yes	53% Yes
	Female	71% No	100% Yes
Age	**18-24**	-	100% Yes
	25-35	69% Yes	50% No
	36-45	86% Yes	86% Yes
	46-55	50% Yes	50% Yes
	56 – 64	67% Yes	60% No
Grade	**Executive Management**	100% No	100% No
	Senior Management	67% Yes	50% No
	Team Leader	100% Yes	83% Yes
	Team Member	72% Yes	70% Yes
Entity	**Consultant**	95% Yes	50% Yes
	Designer 1	60% No	60% Yes
	Designer 2		100% Yes
	Contractor 1	100% No	
	Contractor 2		83% Yes
	Client	100% Yes	

The link between learning and training potentially lends itself to job security, with the concept that employees who are contributing to the organisation learning will in turn yield long term job security through the retention of knowledge. Table 4-47 on page 143 depicts the sample populations' responses regarding long-term job security within both case studies.

The responses are mixed, with both case studies proffering that half the population believe that engineering alliances offer long-term job security. In fact, only the senior management grade demographic and the 56-64 age group demographic agree in both case studies that alliances offer long-term job security. This infers that not all employees enter into engineering alliances for long-term job security, but they do participate to enhance training and learning. This is further underpinned by the findings reported in table 8 and further examination of the sample population. This further examination yielded that participation in engineering alliances is undertaken to advance careers and to exploit opportunities that are not necessarily present through more traditional

contracting methods. The exception to this is the contractor demographic, whereby engineering alliances are perceived to provide long-term job security. The primary reason for this response is that contracting entities hire employees specifically for the engineering alliance, offering the majority of their workforce fixed term contracts for the duration of the engineering alliance. Both consultants and clients report that engineering alliances do not offer long-term job security. Further examination of this determines that both entities employees are exposed to other projects that are external to the engineering alliance and that both entities recognise that employees will migrate between projects in order to provide relevant skills that are needed.

Table 4-47: Long Term Job Security

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		55% Yes	50% Yes
Gender	Male	68% Yes	53% No
	Female	100% No	60% Yes
Age	18-24	-	100% No
	25-35	54% No	50% Yes
	36-45	57% Yes	57% No
	46-55	50% Yes	67% Yes
	56 – 64	100% Yes	80% No
Grade	Executive Management	100% Yes	100% No
	Senior Management	100% Yes	50% Yes
	Team Leader	71% Yes	83% Yes
	Team Member	60% No	60% No
Entity	Consultant	55% Yes	80% No
	Designer 1	50% Yes	80% Yes
	Designer 2		100% Yes
	Contractor 1	75% Yes	
	Contractor 2		67% Yes
	Client	50% Yes	

It is possible to conclude that alliances that are complimentary are the anti-thesis of conflict and as such, relationships between alliances are built upon collaboration, as depicted in table 4-48.

Table 4-48: Collaborative Relationship

Demographic	Sub Demographic	Case Study #1	Case Study #2
Total Population		55% Agree	68% Agree
Gender	Male	48% Agree	59% Agree
	Female	86% Agree	100% Agree
Age	18-24	-	100% Agree
	25-35	69% Agree	50% Agree
	36-45	50% Agree	100% Agree
	46-55	50% Agree	50% Agree
	56 – 64	33% Agree	40% Agree
Grade	Executive Management	100% Disagree	50% Strongly Agree
	Senior Management	67% Strongly Agree	50% Strongly Agree
	Team Leader	43% Agree	83% Agree
	Team Member	68% Agree	70% Agree
Entity	Consultant	55% Agree	60% Agree
	Designer 1	50% Agree	80% Agree
	Designer 2		100% Agree
	Contractor 1	50% Disagree	
	Contractor 2		67% Agree
	Client	100% Agree	

Table 4-48 indicates that both case studies reported a collaborative relationship within their respective sample populations. In fact, in case study #2, the joint venture reported collaborative relationships were present across all demographics. This could be attributed to the nature of the alliance, operating as a joint venture and therefore a singular entity. Case study #1 reported that senior management disagreed that a collaborative relationship was present. This may explain the concept of alliances acting as collisions if the day to day leadership of the alliance does not promote collaboration, leading to a complimentary meeting of core skill sets. The contractor similarly disagreed within this case study, although this can be attributed to the aforementioned business model of this alliance partner and the hiring of employees specific to the alliance; this is underpinned by the concept that this organisation acts as a group of individuals rather than an alliance partner.

This analysis infers that employees have a basic understanding of engineering alliances; an understanding that focuses on the need to work together to achieve a common goal. Closer examination of the employees' deeper understanding of alliances identifies that they are viewed as complimentary or collisions with respect to the relationship between alliance partners. A deeper understanding of a complimentary alliance is underpinned by an alliance that fosters collaborative thinking between its partner's needs to be present. There is however a conflicting view between partnership thinking existing and the presence of a collaborative relationship. This suggests that there is a misunderstanding between partnership thinking and collaboration that needs to be considered as part of the development of the employee engagement framework model. The alternate view to this proffer that when an alliance is in a complimentary state, partnership thinking is subsumed into collaboration and no conflict occurs. The anti-thesis to this is that when the alliance is deemed to be in a collision state, conflict occurs and collaboration is now considered to be called partnership thinking with the end result of the partnership is breaking down.

This deeper understanding of alliances being a "collisions" environment is tempered by the fact that employees recognise conflict is present within engineering alliances. The recognition that conflict is present is useful in determining the status of the alliance relationship, but it is equally important to understand where conflict is identified and within which demographics it occurs the most. If executive management are excluded from the analysis, owing to their role within the alliance, then conflict appears to occur most for team leaders when comparing both case studies. This would be a direct result of the number of relationships that team leaders have to manage. They have to manage senior management expectations, other team leaders' expectations and their direct reports expectations. The duties of the team leader extends to ensuring all deliverables are met on time and budget, so this is essentially a stressful role with multiple pressures.

The analysis suggests that the stage of the alliance needs to be considered. For example, observations of an engineering alliance during its start-up phase suggest a politically charged atmosphere that is underpinned by leaders who are

attempting to build empires. The observations furthermore suggestion there is collaboration in places, which does not suggest that collaborative or partnership thinking is present at start up. This does not align with the concept that principal agent theory underpins the common understanding of an alliance, as is suggested by the interviewees of a live alliance. The concept of empire building suggests elements of game theory, with the need to maximise the 'win' component within a win-win arrangement and to protect the agreed workscope within the alliance.

4.7   Summarising the Analysis

The analysis identifies that there is no one-size-fits-all approach that can be adopted to build an employee engagement model for use within an engineering alliance. This identification is underpinned by no clear theme being identified within the analysis for any of the demographics' under consideration. The demographics' analysed did not determine that a particular combination of the demographics behave in a consistent manner for each of the three case studies under investigation; that is to say that the demographics behave differently dependent upon whether the alliance is at its start-up phase (Case Study #3), it's maturity phase (Case Study #1) or its life expired stage (Case Study #2).

The analysis identified that Kahn's (1990) three psychological conditions of meaningfulness, safety and availability can be used as the basis for the development of an employee engagement model within an engineering alliance. This is justified through the positive argument presented for each of the three psychological conditions; further supported through the triangulation of the data presented for each case study. The analysis also identified that understanding, defined as organisational commitment (Scholl, 1981), should also be adopted in the development of an employee engagement model, such that the component of the 'alliance' becomes the contextualised setting for the employee engagement model. The argument presented within this analysis is based upon the discovery of knowledge and the application of that knowledge to solve the development of the first employee engagement model for engineering alliances.

5   Discussion

This chapter develops the employee engagement model in its theoretical and commercially available states and adjudges the choices made for each state. In particular, it identifies key concepts that need to be managed to deliver four best for project success factors of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994). The chapter concludes with an outline of implications and limitations of the employee engagement model in engineering alliances, and some potential future research directions.

5.1   Developing the Model

5.1.1   Linking the Concepts

The linking of concepts begins in the literature review and revisiting chapter 2 of this thesis and the subsequent development of the concept map shown in figure 5-1. This depicts four 'concept boxes' of 'meaningfulness', 'safety', 'availability' and 'organisational commitment'. The three quadrants of 'meaningfulness', 'safety' and 'availability' comprise of extensions to Kahn's (1990) positive engagement model to represent individual manifestations of employee engagement. The fourth quadrant of 'organisational commitment' depicts a merging with the other three quadrants to represent group manifestations of employee engagement.

Concept Box #1 relates to extending Kahn's (1990) positive engagement of 'meaningfulness'. It is extended by disengagement contributions from Maslach and Leiter (2008) through concepts of 'workload and control' [depicted as 'A' in figure 5-1] and leadership contributions from Xu and Cooper-Thomas (2011) through the concept of 'challenge and autonomy' [depicted as 'D' in figure 5-1. A further extension is made through Macleod and Clarke's (2009) best practice contribution of 'leadership style' [depicted as 'G' in figure 5-1].

Similarly, Concept Box #2 depicts the extensions to Kahn's (1990) positive engagement of 'availability'. It is extended by disengagement contributions from Maslach and Leiter (2008) through concepts of 'reward and recognition'

[depicted as 'B' in figure 5-1] and leadership contributions from Xu and Cooper-Thomas (2011 through the concept of 'self-confidence' [depicted as 'E' in figure 5-1. A further extension is made through Macleod and Clarke's (2009) best practice contribution of 'employee voice' [depicted as 'H' in figure 5-1].

Meanwhile Concept Box #3 depicts the extensions to Kahn's (1990) positive engagement of 'safety'. It is extended by disengagement contributions from Maslach and Leiter (2008) through concepts of 'community and fairness' [depicted as 'C' in figure 5-1] and leadership contributions from Xu and Cooper-Thomas (2011 through the concept of 'interactions' [depicted as 'F' in figure 5-1. A further extension is made through Macleod and Clarke's (2009) best practice contribution of 'integrity' [depicted as 'I' in figure 5-1].

Whilst Concept Box #4 depicts how Scholl's (1981) concept of organisational commitment was merged with quadrants 1 to 3. It depicts how individual behaviours [depicted as 'J' in figure 5-1] combine with organisational behaviours [depicted as 'K' in figure 5-1] and learning [depicted as 'L' in figure 5-1].

These extensions are then supported by five established theories; systems thinking (Jambekar, 1995), social exchange theory (Rahman and Korn, 2010; Rosenbaum, 2009; Paille, 2009), principal agent theory (Fayezi, et al., 2012; Mitchell and Meacham, 2011), game theory (Parkhe, 1993) and cost transaction economics (Tsang, 2006; Pitelis and Pseiridis, 1999; Judge and Dooley, 2006; Drumm, 1999; Parkhe, 1993), where the justification is presented in section 2.6.1 support to each concept is acknowledged through the letters 'A through to I' depicted in figure 5-1, next to each of these identified theories.

The combination of these concept boxes and supporting theories can evidence best for project success outcomes of trust [depicted as 'M' in figure 5-1], co-ordination [depicted as 'N' in figure 5-1], communication [depicted as 'O' in figure 5-1] and interdependence [depicted as 'P' in figure 5-1] (Mohr and Spekeman, 1994) within a developed model.

Figure 5-1: Linking the Concepts

5.1.2 Identifying the Use of Sub-Demographics

The analysis utilised sub-demographic categories of 'gender', 'age', 'grade' and 'entity'. The analysis suggests that there is no 'one-size fits all' conclusion to any of these sub-demographic categories by identifying that there are no consistent trends in the questionnaire responses, which supports the pluralist approach to the model's development in the sense that people play an important role in the success of an alliance and that they should be considered as holding different views and opinions (Aborisade, 2008); this is further supported by Kumar (2011) who highlighted the dilemma that employee engagement can be viewed as both an individual and group phenomenon. It is from this perspective that sub-demographics were not taken forward for the development of the model.

5.1.3 Developing the Meaningfulness Concepts

The 'meaningfulness' concepts were developed by analysing Kahn's (1990) psychological condition of meaningfulness and its associated extensions within an engineering alliance, as depicted in figure 5-2. Meaningfulness (Kahn, 1990) was defined as the psychological meaning to be in work, (i.e. a purpose). The literature review yielded that meaningfulness can be positively coupled with 'leadership style' (Macleod and Clarke, 2009), the concept of 'control and workload' (Maslach and Leiter, 2008) and 'challenge and autonomy' (Xu and Cooper-Thomas, 2011).

Figure 5-2 depicts the concept relationships of meaningfulness (Kahn, 1990). It depicts that 'leadership style' is linked to 'workload and control' through patterns of blame, whilst 'workload and control' and 'challenge and autonomy' are linked through patterns of collaboration. Figure 5-2 depicts a complex series of concept links, with a common theme of leadership that was taken forward to develop a simplified model; identified as a pillar, due to its importance and ability to underpin the model and is discussed in depth later in this thesis. This section continues with narrative exploring these concepts, how they become interlinked, what theory and literature supports them and how they evidence the best for project success outcomes of trust and communication.
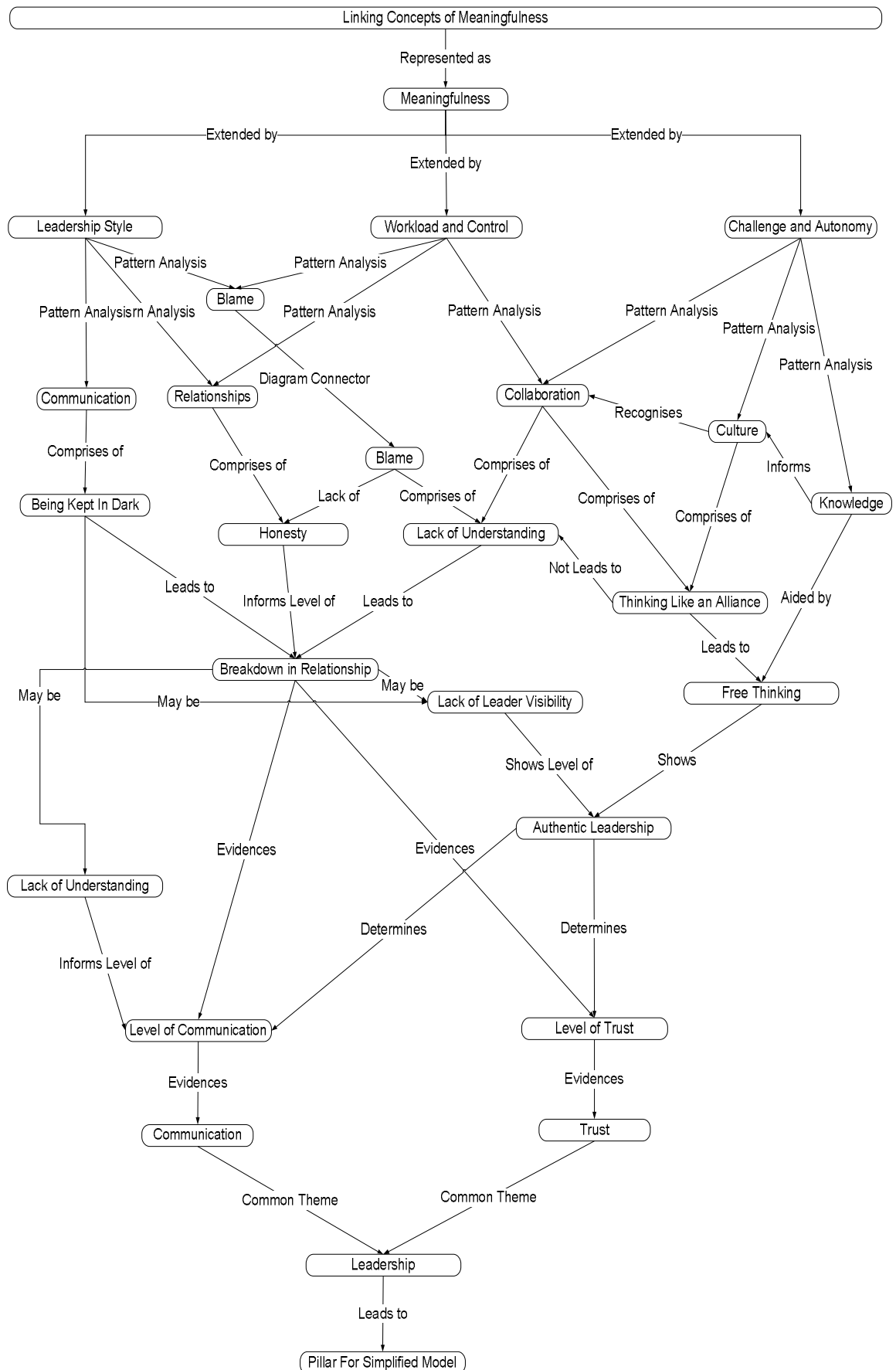
Figure 5-2: Linking the Meaningfulness Concepts

The analysis identified the concept of 'leadership style' (Macleod and Clarke, 2009) to represent patterns of blame, communication and relationships, as shown in figure 5-2. The success of 'leadership style' was identified as requiring Chiaburu et al.'s (2011) authentic leadership, but this was not always present within the alliance. The analysis suggested that employees felt 'left in the dark'; that things were going on that they were not being made aware of, which suggests the principal [leadership] were not in open dialogue with the agents [employees], i.e. delegation was not present which is underpinned by principal-agent theory. In defining this, 'authentic leadership' was challenged through the lack of open and transparent dialogue within the alliance, supporting the views of Chiaburu et al. (2011) in the sense that 'authentic leadership' is more successful and is viewed as participatory (Nazari and Emami, 2012), evidencing a lack of 'trust' is present. This lack of open communication was further tempered by a breakdown in the relationship between employees and leadership.

There was a 'theme of blame' present, with employees citing that they had not seen their manager or many managers at all during their time within the alliance. Case study #1, the live case study, reported that some employees had not seen any management for two years. There is an inference that managers are to blame for this breakdown in the relationship. It also suggests that principal-agent theory is present in the sense that delegation has handed over the employee in its entirety and that the leader has no interest in acting as the principal. The analysis suggests that not all employees feel there is a lack of visibility of managers within the alliance and therefore it could be argued that there is no trust or authenticity within the leadership style; an argument that is supported through the views of Nazari and Emami (2012) and Chiaburu et al. (2011) that 'authentic leadership' is the most successful leadership style. Indeed, it suggests that principal-agent theory is present and that communication with employees may be restricted to simply instructing employees to deliver tasks and only providing them with information needed to concentrate on those tasks. This suggests that 'autonomy', as defined by Xu and Cooper-Thomas (2011), is not necessarily present within the alliance.

The concept of 'autonomy', as described by Xu and Cooper-Thomas (2011), is underpinned by patterns of Morwood's (2008) participation and collaboration and Jambekar's (1995) systems thinking. There is evidence within the analysis to suggest that 'autonomy' is present within the alliance, with employees thinking more broadly and from an alliance perspective. They went on to state that this was unavoidable, demonstrating the 'holistic thinking' of Jambekar (1995). This concept of being unavoidable suggests that employees are encouraged to think freely and form their own thinking, a trait discussed by Jambekar (1995). There appears to be a lack of intervention from the leadership on how to think and behave, which facilitated the employees thinking collaboratively and from an alliance perspective because if they did not, they would not achieve the best for project success outcomes of 'trust and communication'. Furthermore, thinking like an alliance suggests a breakdown in the participating organisation's stated goals of turnover and profit (Judge and Dooley, 2006; Finlayson, 2011).

Thinking like an alliance suggests that 'systems' thinking' is present for it demonstrates thinking across the bigger picture and that the objectives of the alliance are important. Systems thinking (Jambekar, 1995) and leadership underpin 'autonomy' (Xu and Cooper-Thomas, 2011), in the sense that an authentic leadership style will lead to an honest and open relationship pattern (Nazari and Emami, 2012; Chiaburu et al., 2011) within the alliance and that in turn enables employees to freely interact with one another, devoid of how the partner organisation thinks independently of the alliance. This suggests that employees understand the basic premise of an alliance, about working together, pooling resources (Chung et al., 2006; Johnston and Staughton, 2009; Luo and Deng, 2009) to meet a common goal (Morwood et al., 2008) that they would not be able to meet as independent organisations and it is this premise that demonstrates a systems thinking approach.

There is however a 'challenge', as described by Xu and Cooper-Thomas (2011), within the alliance to ensure 'autonomy' is present. There is evidence within the analysis that depicts collaboration is understood; this is evident through the recognition of different types of cultures being present. The recognition is deeper than just partner organisations cultures, as defined by Rahman and Korn (2010);

it extends to recognising that the alliance also has its own culture; underpinned by autonomy and thinking like an alliance, which represents systems thinking through the broader sense of holistic thinking. The recognition of different cultures (Rahman and Korn, 2010) also extends itself across the entire spectrum of employees; the management also recognise this too. This is akin to social exchange theory whereby employees and organisations will make exchanges of knowledge to optimise information flow between employees and leaders. Given that authentic leadership has been established within the alliance, the honest and transparent characteristics described by Chiaburu et al. (2011) of leadership will enable these cultures to be fused together as one. This is underpinned by principal-agent theory because the principal [leaders] will instruct the agents [employees] on how to operate within a singular culture. By fusing the four cultures of participating organisations together to make a fifth and singular culture, there needs to be broader thinking than just the parent organisation and its culture; akin to broader and Jambekar's (1995) holistic thinking, i.e. the four cultures need to be glued together.

There is emergent data within this research that suggests building a collaborative culture *is not that simple*. For example, employees reported teething problems and challenges being present within the alliance. These teething problems and challenges related to clashes of corporate cultures that were present at the start-up of an alliance (case study #3), still present within a live alliance that is seven years old (case study #1) and a life expired alliance (case study #2). These clashes have been previously identified to be root causes of conflict that surround the level of available 'workload'. The challenge that leadership faces is to work through these root causes through relationships generated within the alliance which is underpinned by social exchange theory though identifying the exchanges that need to be made to work through the challenges.

There is further evidence within this research that suggests that the *alliance was not collaborative* and that 'authentic leadership' (Chiaburu et al., 2011) was failing to deliver an environment of honesty and transparency. Some employees within the alliance reported that they did not feel part of the alliance and that others were trying to blame them for issues and/or problems within the alliance.

This pattern suggests that not everyone felt part of the alliance and that the leaders did not make those affected employees feel part of the alliance. This appears to align with principal agent theory and a lack of interaction between the principal and the agent. It aligns with the idea of employees being kept in the dark and only being informed of what they need to do to complete their assigned tasks. This can be attributed to a breakdown of 'authentic leadership' style, with its impact affecting employees' feelings about control within the alliance.

The concept of 'control' is underpinned by patterns of relationship, collaboration and blame and supported by social exchange theory, principal agent theory and systems thinking. Evidence gathered within the research supports the notion that 'authentic leadership' is not wholly present and that the concept of principal-agent theory can be associated. Employees reported that management were keeping things close to their chest, with a reported change in atmosphere between the two parties. This suggests that 'authentic leadership' (Chiaburu et al., 2011) is not present because there would be a reported feeling of honesty and transparency. It suggests that these basic social exchanges (Bignoux, 2006; Rahman and Korn, 2010; Rosenbaum, 2009) of honesty and transparency are not present and that the basic principles of principal agent theory are present. Within principal agent theory it was possible to identify the principal (management) informing the agent (employees) what the principal believes the agent needs to know to complete his/her tasks, thus developing a directed leadership style; the anti-thesis to Chiaburu et al.'s (2011) 'authentic leadership'.

The analysis suggests that employees do not feel in 'control' of these behaviours and that autonomy, as described by Xu and Cooper-Thomas (2011), has been diminished. Employees describe this as a power shift from a perspective of shared power under an authentic leadership style towards a shift in power that was less for the employees. The resulting outcome, as reported through the analysis, was a 'frosty communication' between employees and leaders which suggests that principal-agent theory is present under the guise of communicating when the need arises to. In addition to this, it shows an anti-thesis towards Jambekar's (1995) systems thinking, it reveals closed thinking that is akin to not

thinking collaboratively, as Morwood (2008) describes, but thinking independent of the collaboration and the alliance. This 'style of leadership' and general breakdown in the relationship is further tempered when the employee requests to leave the alliance and return to the parent company. In this instance, the analysis points towards a lack of 'control' (Maslach and Leiter, 2008) for the employee, because the request is either refused or it takes longer than anticipated to complete. There is a general lack of 'communication' regarding this request and employees feel that there is a lack of social exchange (Bignoux, 2006; Rahman and Korn, 2010; Rosenbaum, 2009) pertaining to honesty and transparency. The lack of responding to this type of request relates to the 'control of workload', as described by Maslach and Leiter (2008).

The 'workload' (Maslach and Leiter, 2008) concept is underpinned by patterns of relationship and collaboration and supported by principal agent theory and systems thinking. The evidence suggests that there is a clash over the perception and workload and its successful delivery. This clash over perception relates to the expectations that the management have over workload and the reality of delivering those expectations by the employees. This imbalance between the two parties can be attributed a lack of systems thinking for both parties; a failure to recognise the bigger picture through a lack of open communication, the traits of authentic leadership (Chiaburu et al., 2011). It also purports there to be a lack of autonomy, with the leadership operating a traditional principal-agent theory approach to informing the employees of what they need to do to complete the task. These behaviours can be attributed to workload issues and control (Maslach and Leiter, 2008); where the workload is buoyant, all parties work well together and when the workload is less plentiful, protecting the workload that a person has becomes important. This suggests that it is not only organisations that have conflict over workload but also employees.

The meaningfulness concepts of 'leadership style', 'workload and control' and 'challenge and autonomy' can be interlinked to evidence trust and communication. Trust is evidenced through authentic leadership and the leaders' ability to have open, honest dialogue with the employees over workload, which further evidences communication. This in turn suggests that employees and

organisations may think alike and that this can be addressed further within Kahn's (1990) safety psychological condition.

5.1.4 Developing the Safety Concepts

The safety concepts were developed by analysing Kahn's (1990) psychological condition of associated and its associated extensions within an engineering alliance, as depicted in figure 5-3. The safety psychological condition (Kahn, 1990) is defined as employees feeling psychologically safe in their work, (i.e. to have job security). The literature review yielded that safety (Kahn, 1990), can be positively coupled with 'fairness and community' (Maslach and Leiter, 2008) and the 'interactions' with one another (Xu and Cooper-Thomas, 2011).

Figure 5-3 depicts the concept relationships of 'safety' (Kahn, 1990). It depicts that 'community and fairness' is linked to interactions through patterns of relationships. It also depicts that integrity is not directly linked to these concepts from the outset; integrity does however underpin the need for transparent communication and the part that 'communication' plays in the 'community'. This concept of 'community' is underpinned through 'teamwork' and 'culture' with an emphasis on the need to trust one another and work together. There is a strong underlying theme of honesty and transparency within the 'community' which is evidenced through 'communication'.

It further depicts a series of concept links and a common theme of community that was taken forward to develop a simplified model; identified as a pillar of the model, due to its importance and ability to underpin the model and is discussed in depth later in this thesis. This section continues with narrative exploring these concepts, how they become interlinked, what theory and literature supports them and how they evidence the best for project success outcomes of 'trust, interdependence, co-ordination and communication'.
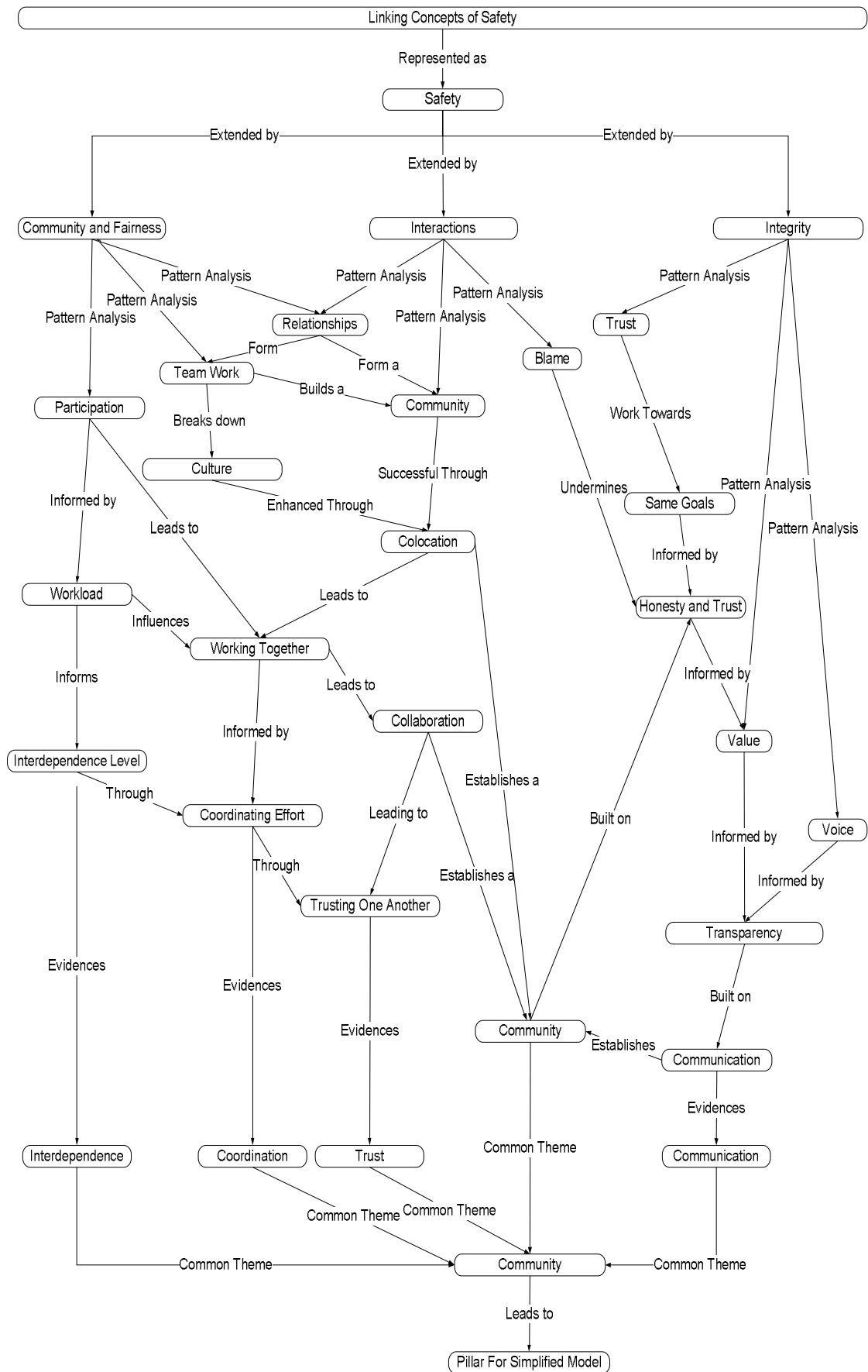
Figure 5-3: Linking the Safety Concepts

The analysis suggested that Maslach and Leiter's (2008) concept of 'community' is underpinned by patterns of participation, relationships and teamwork. There is evidence within the analysis that employees view an alliance as a 'community' whereby they describe the alliance as ultimately binding people together. This binding together represents social exchange (Bignoux, 2006; Rahman and Korn, 2010; Rosenbaum, 2009) through a sense of community that enables employees to interact with one another; social interaction being a success factor described by Xu and Cooper-Thomas (2011). This social interaction is further tempered by the manner through which the 'community' is established; the analysis purports that everybody was 'co-located' in one office. This co-locating in one office describes a community that is forming and that individual partner organisation identities are starting to disappear. This is essentially the community defining the broader picture and developing systems thinking capabilities; there is a need to work together to achieve success and the community can help them achieve this. It depicts a strong sense of collaboration between employees, one that suggests if the 'community' is not co-located, then partner organisations can influence the 'community' thinking to suit their own stated goals, evidencing co-ordination and interdependence.

There is some evidence within the analysis that suggests co-locating makes the 'community' stronger; employees proffered that co-locating provides a common office and a sense of freedom of being exposed to new ways of working. This further tempers systems thinking and the concept that new ways of working can be discovered, but there is also a strong link to social exchange theory. Employees are starting to recognise the social exchanges (Bignoux, 2006; Rahman and Korn, 2010; Rosenbaum, 2009) of 'information, working together, new ways of working' to achieve common goals (Morwood et al., 2008) and the opportunity to move away from their own parent organisations culture (Rahman and Korn, 2010). The concept of social exchange theory is further underpinned within the 'community' through relationships - employees are recognising that they need to build them and that by being part of a community - building these relationships can be easier. It is this acknowledgement of communication as being part of the social exchange of learning and moving forward that is of significance. From a systems thinking perspective, the softer

concepts of collaboration are being shaped and this can be further linked to Chiaburu et al.'s (2011) authentic leadership style, facilitating the 'community' forming through honesty and transparency; an authentic leadership trait built upon trust.

The authenticity of the 'community' recognises that not everyone is harmonious within the community. The community recognised that social exchanges (Bignoux, 2006; Rahman and Korn, 2010; Rosenbaum, 2009) of interaction would not occur within these parts of the community. The 'community' is recognising that non participatory behaviours exist and that they are not aligned with the community ethos of working together in an open and transparent manner (Chiaburu et al., 2011). This thinking aligns with the concept of 'workload' (Maslach and Leiter, 2008) and the evidence suggests that when 'workload' is buoyant, the behaviours of the non-participatory employees are not as prominent as they could be when 'workload' is less buoyant. This suggests that 'fairness' (Maslach and Leiter, 2008) within the 'community' is not present and that the 'community' is not interdependent upon one another.

Maslach and Leiter's (2008) concept of 'fairness' is underpinned by patterns of blame and understanding and is supported by systems thinking and game theory. There is evidence that supports the non-participatory behaviours demonstrate that not all employees are working within the 'community' and that relates to the analysis, identifying that there are different objectives for each of the alliance partners. Whilst this has close synergies with Chiaburu et al.'s (2011) 'authentic leadership' style and Rahman and Korn's (2011) fusing of four participating organisational cultures, it is further tempered by Jambekar's (1995) systems thinking. This tempering of systems thinking depicts a 'community' that has competing objectives, not aligned with one another and not collaborative in nature. From a systems thinking perspective the alliance 'community' is divided and disjointed because each of the partner organisations are perceived to be trying to gain a competitive advantage over one another, which is in polar contrast to what Jambekar (1995) describes as a non-holistic approach that does not evidence interdependence. This competitive advantage relates to increasing workload at the expense of other partner organisations; a concept that is

underpinned by game theory, whereby one organisation attempts to upset the status quo by changing the workload agreements without the full consent of others. There is a lack of understanding of the outcomes of these behaviours; it results in blame and the evidence suggests that this causes a shift from collaborative behaviours to one of protecting existing work streams. This creates a barrier with each parent organisation and suggests that the community can operate in an open and transparent manner; a suggestion that 'authentic leadership' is not present within the alliance. This in turn suggests that the 'interaction' (Xu and Cooper-Thomas, 2011) between employees may not be optimised and that 'trust and communication' are not present.

Xu and Cooper-Thomas' (2011) concept of 'interaction' is represented through 'community interaction' and 'recognition'. A social exchange is present through interaction within the community that will facilitate the broadening of knowledge and expertise of the team. This social exchange also contrasts with cost transaction economics, whereby the employee and the organisation places financial value on the learning; it benefits the employee, the alliance and parent organisation and can be viewed as an investment in the employee. The employees identified the need for socialisation within the 'community' as a mechanism for breaking down the barriers between participating organisations. There was an understanding that this did not fully breakdown the barriers but there was a 'recognition' that did provide a neutral setting for honesty and transparency to prevail. There was further 'recognition' of transparency and honesty; the identification that some people are just not interested in the community. This does not mean that these employees are not participating; it just means that their personalities are not akin to community thinking. Employees are attempting to see the bigger picture and articulate systems thinking; there is an underlying trust there that evidences one of the best-for-project success outcomes (Mohr and Spekeman, 1994)

The 'trust' (Lamothe and Lamothe, 2001; Bignoux, 2006; Lapierre, 1997) concept is underpinned by patterns of relationships, participation and emotion. The relationship between the leader and the employee is honest and transparent; each understands the others role. The 'community' takes this empowerment

further and works together to get things done. There is little or no feeling of blame if things will go wrong, the social exchange is the belief that if things do go wrong then they are in it together. There is recognition that this level of trust and empowerment needs to be earned. This takes time and is formed through the principal agent theory. This is further tempered by the 'recognition' that earning trust comes down to how individuals get on with one another and the presence of a community environment supports this. In addition to this, the concept of 'value' needs to be considered.

Maslach and Leiter's (2008) concept of 'value' is underpinned by the pattern of teamwork. In order to build Lamothe et al.'s (2001) trust within the community there is a need to feel appreciated within the community. The analysis suggests that there is a lack of feeling appreciated within the 'community' and this explains why some members of the 'community' choose to isolate themselves from the community. If they don't feel valued, they withdraw from the 'community' and appear to lose their voice.

The safety concepts of 'interactions', 'integrity' and 'community and fairness' can be interlinked to evidence trust, interdependence, co-ordination and communication'. The interlinking of these concepts is made through the identification that the *alliance is a community* and that *authentic leaders' create this community* through a series of interactions between the employees. These interactions require employees to work together in an honest and open environment, evidencing trust between each other. This level of trust is dependent upon the workload and the need to interdepend upon one another to deliver the project, which further requires a degree of co-ordination with respect to delivering the work and exchanging knowledge. The community needs to have *integrity through open communication*, which suggests that authentic leaders will develop the community in a style akin to the traits of authentic leadership. In doing so, it is possible to examine how Kahn's (1990) availability psychological condition can be used to examine how the community establishes its own voice.

5.1.5 Developing the Availability Concepts

The availability concepts were developed by analysing Kahn's (1990) psychological condition of availability and its associated extensions within an engineering alliance, as depicted in figure 5-4. Availability is the third of Kahn's (1990) psychological conditions and is defined as the employee psychologically making themselves available for work (i.e. perform the role). The literature reviewed suggested that the psychological condition of availability (Kahn, 1990) can be positively coupled with 'employee voice' (MacLeod and Clarke, 2009), the concept of 'recognition and reward' (Maslach and Leiter, 2008) and 'self-confidence' (Xu and Cooper-Thomas, 2011).

Figure 5-4 depicts the concept relationships of safety (Kahn, 1990). It depicts that reward and recognition and employee voice is linked through patterns of communication and understanding. It also shows that self-confidence is not directly interlinked with the other concepts until the 'level of dialogue' with leadership is established, which suggests that it is not a dominant concept of the model. It further depicts that 'team work' and 'workload' through 'harmonious working' are concepts that build the extension to availability. The visibility of the leadership and the level and type of communication are also themes that under pin the extension to 'availability' with dismissive behaviours considered being a factor that leads to the breakdown of the relationship between the employees and leadership.

Figure 5-4 further depicts a series of concept links and a common theme of employee voice that was taken forward to develop a simplified model; identified as a pillar of the model, due to its importance and ability to underpin the model and is discussed in depth later in this thesis. This section continues with narrative exploring these concepts, how they become interlinked, what theory and literature supports them and how they evidence the best for project success outcomes of 'trust and communication'.
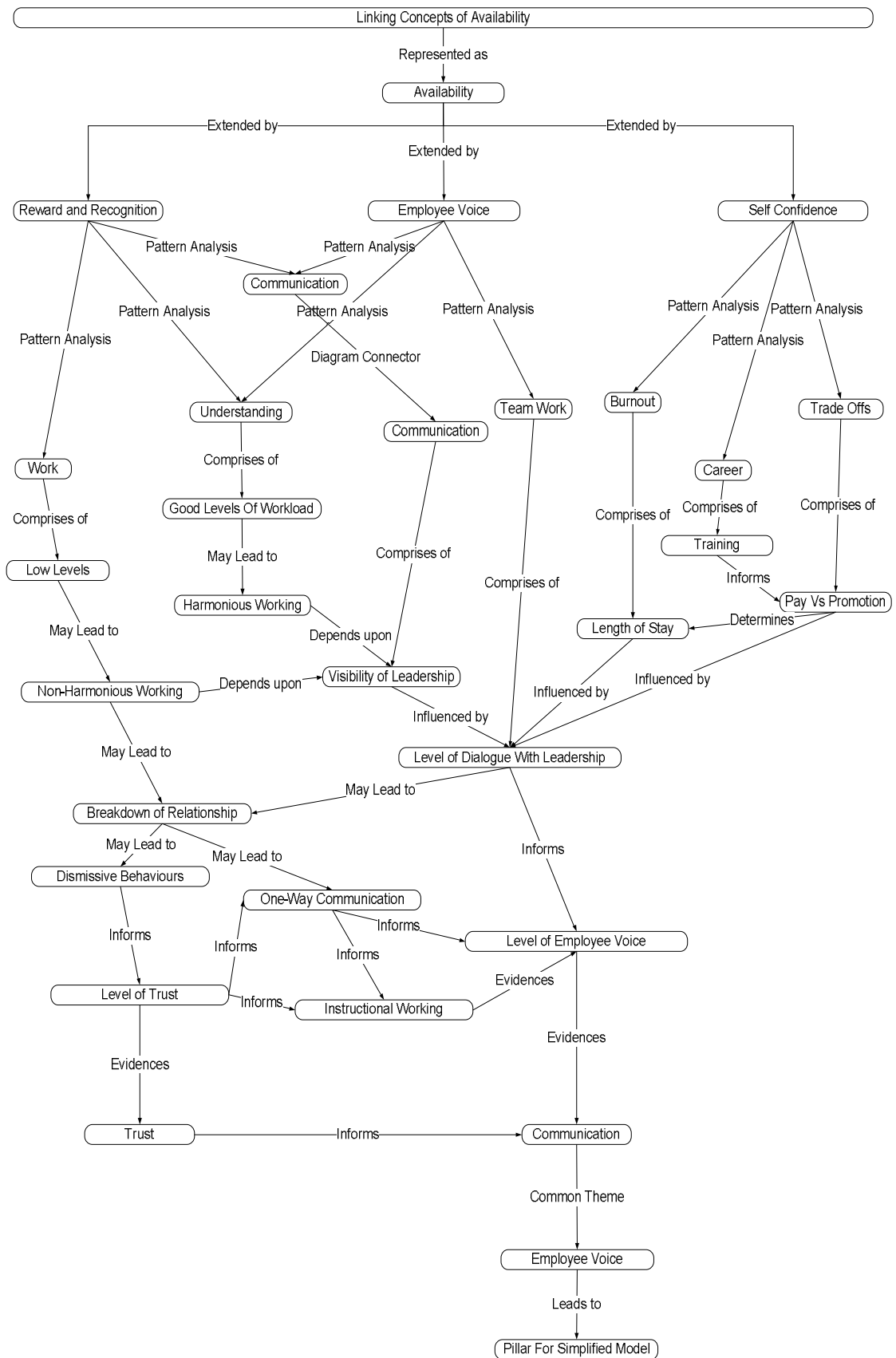
Figure 5-4: Linking the Availability Concepts

The analysis suggested that MacLeod and Clarke's (2009) 'employee voice' plays a potentially significant concept within the community as defined by Maslach and Leiter (2008). MacLeod and Clarke's (2009) employee voice is underpinned by patterns of communication, teamwork and understanding. The analysis showed that employee voice (MacLeod and Clarke, 2009) is present with the community but its level of success is tempered by the 'workload', as described earlier and evidenced through Maslach and Leiter's (2008) view of workload within the alliance. 'Employee voice' was reported as being diminished by employees who perceived that during lean periods of 'workload' (Maslach and Leiter, 2008), leaders were less 'authentic' (Chiaburu et al., 2011) and more directed (Chiaburu et al., 2011); inasmuch that managers were instructing them to do tasks in a certain way, thus removing their autonomy (Xu and Cooper-Thomas, 2011) and authenticity and adopting a principal-agent approach of instructing information that is needed for specific tasks only, resulting in a lack of trust. The employees reported that they could not make their concerns heard and that the approach had flaws within it; they felt their point of view was being dismissed, highlighting that the principal [leadership] was enabling a one-way communication flow with the agent [employee].

However, employees would continue to *follow the latest set of instructions*, recognising that the community would become divided if they did not; they were making a social exchange (Bignoux, 2006; Rahman and Korn, 2010; Rosenbaum, 2009) to continue to *follow the instructions*, and that eventually the community would return to a more autonomous one, as suggested with Chiaburu et al.'s (2011) 'authentic leadership'. Moreover, the anti-thesis is indeed possible; where the social exchange is made to continue under the premise that Xu and Cooper-Thomas' (2011), autonomy and authenticity will return, which suggests that *trust and communication are tacitly linked*. It has already been discussed that the 'autonomous community spirit ebbs and flows with respect to workload' and employees report that when employee voice is considered to be a success it is when they are being heard and that changes are being implemented; they believe in this condition that change is possible. They also identify that authentic leadership (Chiaburu et al., 2011) is present, with a transparent understanding of when leadership would be present and dialogue would be open, thus evidencing

communication. The ability to speak directly with leadership was underpinned by the 'recognition' concept.

Maslach and Leiter's (2008) 'recognition' concept is underpinned by the pattern of 'understanding'. In this instance, it was reported that the leadership, when viewed through Macleod and Clarke's (2009) lens, understood that everyone needed to have a fair share of workload and there was the ability to talk to the leadership about the workload. In turn, the employees would also act collaboratively by understanding each other's roles; if they recognised it was not happening they could raise the issue in an 'honest and open community'. The employees recognised that reward also came with 'recognition', effectively seeking a social exchange of knowledge and information based on trust, and acquired through communication between employees and the leadership.

Maslach and Leiter's (2008) reward concept lead to employees recognising that the rewards were more aligned to bonus payments rather than promotions. They recognised that they, as employees, needed to work together to achieve this but its financial value placed it firmly at the centre of cost transaction economics and their personal worth. This could be connected to employees' 'self-confidence'; supporting the view of Xu and Cooper-Thomas' (2011), where self-confidence holds a significant link to the concept of employee engagement. Xu and Cooper-Thomas' (2011) self-confidence concept is underpinned by the pattern of career and cost transaction economics. There is evidence within the analysis that employees face burnout after 2 to 3 years within the alliance; the link being that self-confidence is diminished because the employee can no longer make the trade-off between bonus payments and a lack of career progression.

The availability concepts of 'reward and recognition', 'employee voice' and 'self-confidence' can be interlinked to evidence 'trust and communication'. Trust is evidenced through 'authentic leadership' and the leaders' ability to have open, honest dialogue with the employees over workload and how they can better work together within the 'alliance as a community' to acquire new knowledge through communication, achieved through employee voice. Employees make a trade-off between bonus payments and career progression through the acquisition of

knowledge and how to apply it. However, they face burnout after 2 to 3 years and there needs to be a mechanism by which the employees can talk to leaders' such that this can be managed and the employees feel in control of their career progression, evidencing the need for 'employee voice within the community'. This level of employee voice is governed by the level of 'authentic leadership' present within the community but the level of authentic leadership and authentic community spirit can be determined by the level of 'organisational commitment' from the participating organisations, which results in the need to ascertain if organisational commitment can have an impact upon authentic leaders in an 'alliance community with good levels of employee voice'.

5.1.6 Developing the Organisational Commitment Concepts

The organisational commitment concepts were developed by analysing Scholl's (1981) organisational commitment and its associated manifestations within an engineering alliance, as depicted in figure 5-5. Organisational commitment is not a psychological condition but it is concerned with the alliance concept of employee engagement. The literature review yielded that organisational commitment (Scholl, 1981), can be positively coupled with employee behaviours (Scholl, 1981) and the inter-relationships from the human perspective (Jambekar, 1995) that form the three psychological conditions (Kahn, 1990), leading to enhanced learning and career paths through a better understanding of the engineering alliance and its constituent partners' roles.

Figure 5-5 depicts the concept relationships of organisational commitment (Scholl, 1981). It depicts a series of concept links and a common theme of behaviours that was taken forward to develop a simplified model; identified as a pillar of the model, due to its importance and ability to underpin the model and is discussed in depth later in this thesis. In particular, it depicts that partnerships play an important role in the success of an engineering alliance, with particular emphasis on the quality of the partnership; be it a collision or complimentary in nature (Steinhilber, 2008).
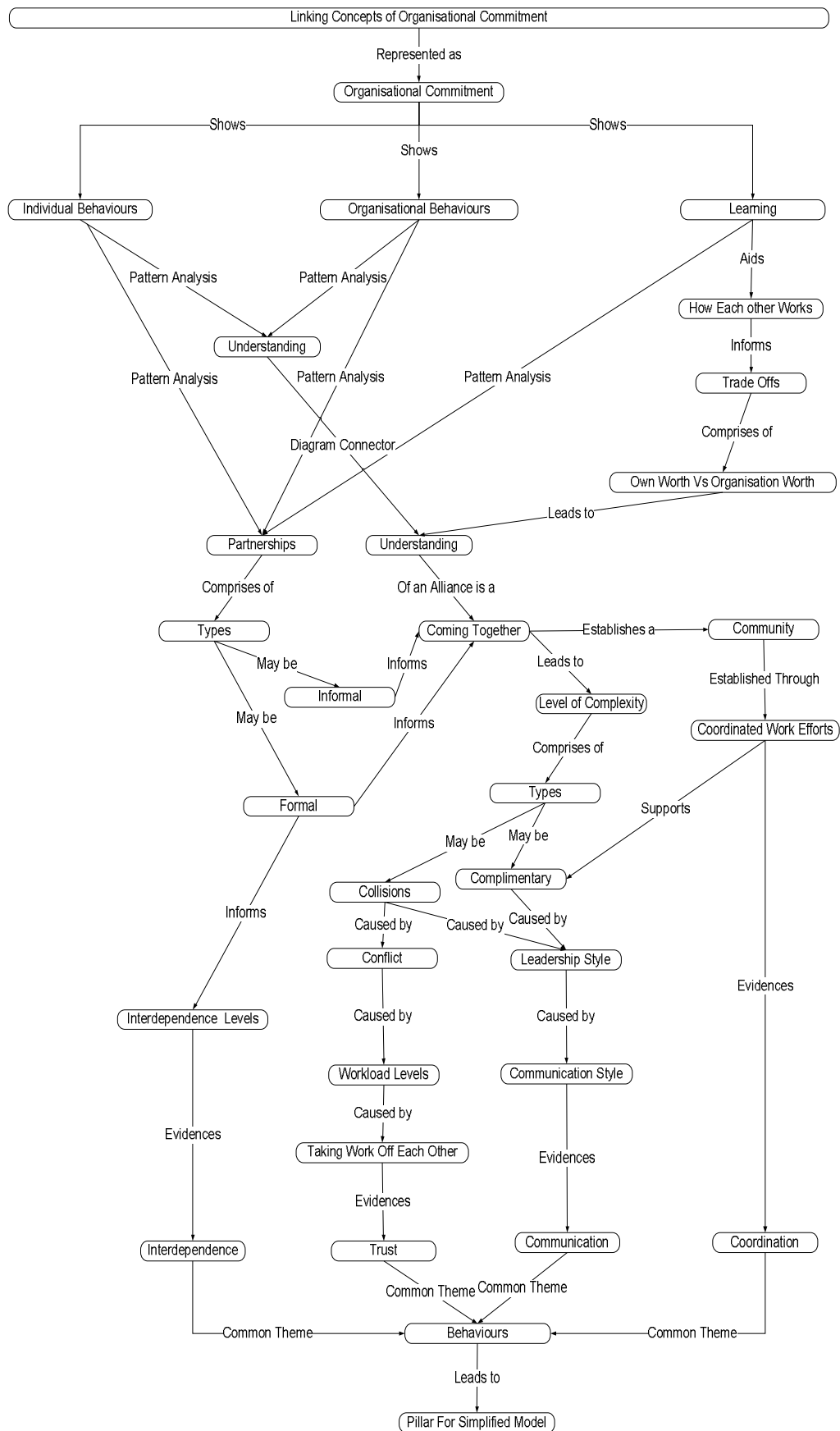
Figure 5-5: Linking the Organisational Commitment Concepts

This section continues with narrative exploring these concepts, how they become interlinked, what theory and literature supports them and how they evidence the best for project success outcomes of 'trust', 'interdependence', 'co-ordination' and 'communication'. The analysis presents a high-level understanding of what an alliance is, with employees proffering that it is an informal partnership of organisations (Chung et al., 2006; Johnston and Staughton, 2009; Luo and Deng, 2009) in order to achieve a common goal (Teng and Das, 2008). This suggests a loose understanding of alliances, one that has been passed down from the leadership to the employees; a guise of principal-agent theory whereby the leadership, acting as the principal, inform the agents (the employees) of what an alliance is. There is also evidence that the interpretation aligns with theoretical definitions of an alliance through *the tacit link of an informal partnership*.

There is, however, a more generalised understanding that suggests employees describe an alliance as a coming together in the spirit of achieving a common design outcome through co-ordination. This type of description supports the concept of an 'alliance community', a sense that the alliance has purpose and that a coming together involves working together, presenting. The understanding of the organisation role is then misunderstood as the depth of understanding is further examined; there is a general complexity around the role that each participant organisation performs and how that role interacts with other. The alliance is described as either complimentary or collisions; one assumes a harmonious community, the other does not. This complexity is explained by systems thinking and a lack of clarity regarding each other's roles. The analysis suggests that partnership thinking (Steinhilber, 2008) is not wholly present and that leaders 100% agree that it is not present at all. The leadership will promote there to be a lack of partnership thinking (Steinhilber, 2008) through principal agent theory; that is to say that they will instruct employees in such a way that if they carry out the instructions, which they are likely to according to the availability psychological condition (Kahn, 1990), then partnership thinking will diminish and the community will be in conflict and demonstrating a lack of trust and interdependence with one another. The analysis reports that conflict is high amongst the partners, predominantly because of workload buoyancy

(Maslach and Leiter, 2008). Despite the levels of conflict, the ability of partner organisations to learn from one another is perceived to be high. This suggests systems thinking (Jambekar, 1995) is present through the need to work together through interdependence but cost transaction economics is also present through the desire to learn, improve and gain competitive advantage. The desire to gain competitive advantage can end with game theory being present as partner organisations attempt to increase their workload and represents a breakdown in trust. The opportunity to learn for employees was also perceived to be high, with a majority of employees reporting that formal training was provided within the alliance. This is akin to cost transaction economics and the employee's desire to increase their personal worth. The trade-off was a perception that long-term job security was provided and that employees would see this also as a social exchange and trade their career path for job security.

The organisational commitment concepts of 'individual behaviours', 'organisational behaviours' and 'learning' can be interlinked to evidence 'trust', 'interdependence', 'co-ordination' and 'communication'. In particular, organisational commitment relates to understanding in the sense that employees did not always understand each other's roles nor did each of the participating organisations; as such organisational commitment is considered to be understanding and learning from this perspective. Learning informs the alliance, as a community, how to make trade-offs and how to learn from one another through the co-ordination of working together. By working together as a 'community' the participating organisations can learn to better understand each other's roles and the need to interdepend upon one another to achieve project success. This level of interdependence is dependent upon how participating organisations describe the alliance; is it complimentary or collisions focussed in nature? This is dependent upon whether the participating organisations understand one another or wish to cheat one another and introduce a breakdown of trust through conflict. However, the anti-thesis to this is authentic leadership and the ability for the participating organisations to have honest and open communication about challenges they face and to work through them together. In doing so they can interdepend upon one another, coordinate their work efforts and trust one another to the extent that project success will be achieved.

5.2 The Four Pillars Model

5.2.1 The Theoretical Model

Recalling that there are four pillars of a simplified model, it was possible to present these concepts to build a pictorial simplified model that can be presented as a contribution to theory. Figure 5-6 depicts the concepts of 'leadership', 'community', 'employee voice' and 'behaviours' and the linking of these concepts through 'authentic leadership', 'cultural qualities' and 'understanding' one another.
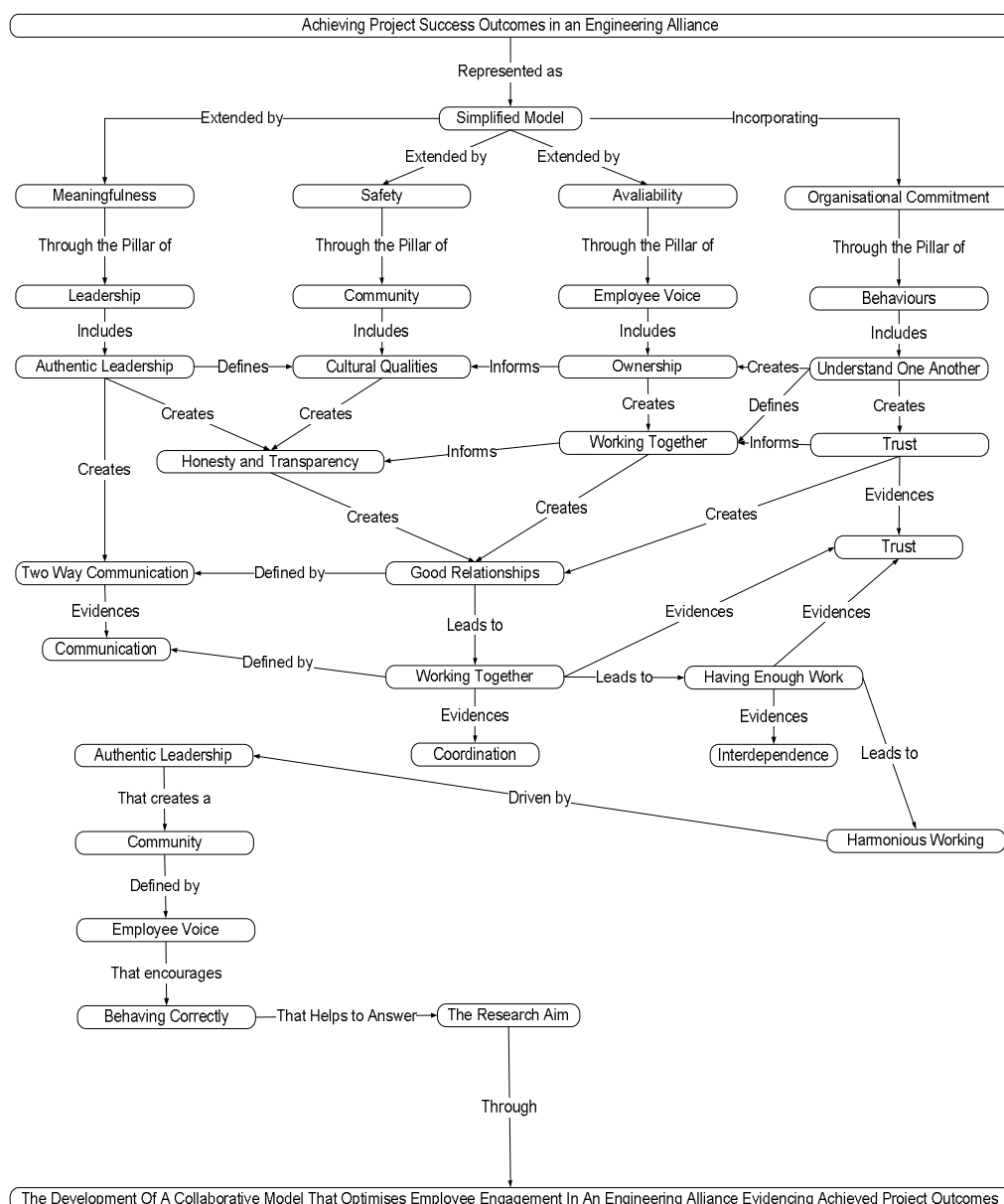

Figure 5-6: Linking the Concepts of the Simplified Model

Figure 5-6 depicts that 'trust' plays an important part in linking the concepts to build the model. 'Trust' is reliant on honest and transparent relationships that are underpinned by two-way communication that leads to harmonious working through good relationships. Figure 5-6 further depicts how the best for project success factors of 'trust, communication, co-ordination and interdependence' (Mohr and Spekeman, 1994) are evidenced. This section continues with narrative exploring these concepts, how they become interlinked and what theory and literature supports them. The continuing narrative in this section discusses the how the concepts of figure 5-6 can be presented pictorially.

The analysis presented in chapter 4 and furthermore in section 5.1.1 suggested that the proposed employee engagement model can be presented as an extension to Kahn's (1990) and Scholl's (1981) organisational commitment as quadrants depicting four critical concepts of 'leadership', 'community', 'employee voice' and 'behaviours', as shown in figure 5-7.
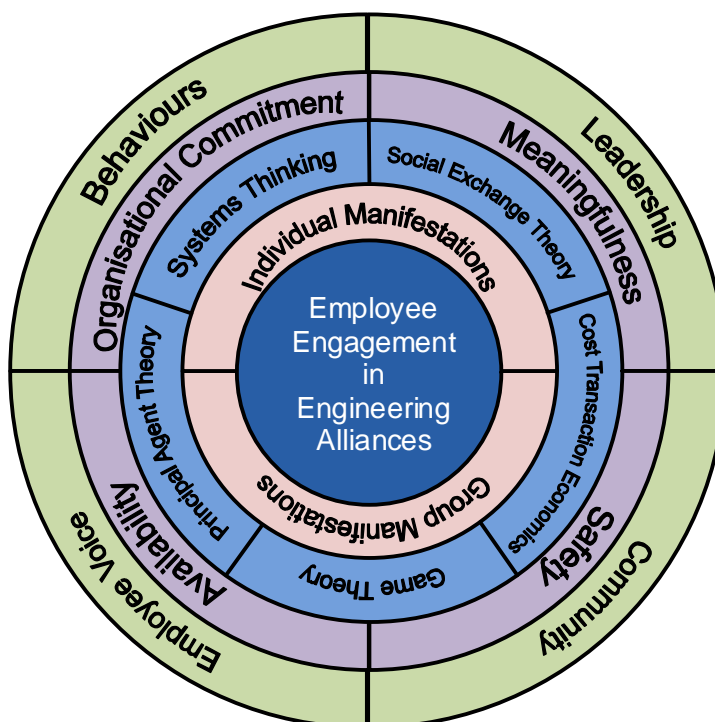

Figure 5-7: The Theoretical Model

Figure 5-7 was built by taking the findings of the analysis and presenting them in a pictorial format. 'Leadership' was considered to be the most important concept of 'meaningfulness' because the style of leadership can have an impact upon how the team members of the alliance behave. This is underpinned through principal-agent theory in the sense that the leadership can act in an 'authentic or directive' style and this results in the principal [leadership] communicating effectively with the agent [members of the alliance] in an honest and open fashion. The concept of leadership evidences the best for project success outcome of 'trust' between leadership and the alliance members. Leadership has a connection with the concept of 'community'. 'Community' was viewed as the most important concept of safety because this describes how the alliance members transcend the cultural barriers and operate together. If the leadership are considered to be acting in an 'authentic style', then the 'community' is said to behave in a similar style, whilst the reverse is true that is the leadership style is considered to be 'directive', the 'community' is considered to behave in a similar style. The analysis suggests that if the 'community' is behaving in an 'authentic style' then the social exchanges of knowledge and information can transcend the cultural barriers more freely, demonstrating that social exchange theory is present. The concept of 'community' evidences the best for project success outcomes of 'co-ordination' because employees appear to be *better coordinated* where 'authentic leadership' style is present and the community is operating in an authentic way.

Given that an 'authentic leadership style' can lead to a 'community operating in an authentic style' then 'availability' can be determined through the concept of 'employee voice'. 'Employee voice' was considered to be important because it represents and honest and transparent dialogue between people. If the leadership and community are not operating in an 'authentic style' then employee voice is reported as being diminished. This diminished level of 'employee voice' is akin to transaction cost economics, whereby the employees choose to make trade-offs regarding what knowledge or information needs to be shared, which in turn has an effect on the social exchanges. 'Employee voice' evidences the best for project success outcomes of 'communication and interdependence'. In diminishing the level of employee voice the level of

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interdependence within the community also reduces as members of the alliance seek to build barriers to not interact openly and feely with one another. This in turn suggests that 'authentic leadership' has an impact on the authentic behaviours of the alliance through the development of a community and employee voice. The three key concepts of 'leadership, community and employee voice' represent individual manifestations of employee engagement; they do not suggest what behaviours are required from organisations operating with the alliance, which addresses the group manifestations of employee engagement.

The 'behavioural' concept represents 'organisational commitment' and is considered the most important concept because it evidences 'trust, co-ordination, communication and interdependence' as a group phenomenon, with the alliance partner organisations being the groups. *It builds on from the required authentic leadership style, community and employee voice* but it is more concerned with what happens when an alliance partner is not behaving in authentic style. The analysis suggests that 'authentic leadership style, community and employee voice' are not present where there is no understanding of one another's role within the alliance. Where there is a lack of work alliance partners will try to steal work from one another to maintain their profit and turnover. This may suggest that game theory is present within the alliance because when there is plenty of work for all the alliance partners, they 'communicate', 'coordinate' and 'interdepend' upon one another; the concept of 'trust' is between them is high. However, where there isn't plenty of 'workload', then trust breaks down because of the need to steal work from one another, which in turn leads to strained communication, potentially duplicating work effort through a lack of co-ordination and no interdependence is present because there is no need to understand what each other is doing.

The model is then brought together as a singular model, i.e. not four quadrants, through systems thinking. This fifth theoretical concept evidences that 'authentic leadership', 'the alliance as a community', 'the community having a voice' that is heard and alliance partners 'behaving in authentic style are not independent of one another. All of these manifestations of employee engagement, group or

individual, are interlinked and systems thinking encourages this inter-linkage to be viewed as the bigger picture. It can be argued that the 'leadership style' is the most important concept of employee engagement because this *sets the tone for how the other concepts will be achieved.* This in turn suggests that the best for project success outcomes of trust, co-ordination, communication and interdependence should also be viewed as inter-linked and will only be achieved if the four concepts of leadership, community, employee voice and behaviours are considered to be authentic in style and nature.

5.2.2 The Commercial Model

Section 5.2.1 depicted the model that evidences a contribution to the theory. However, the model was further developed for contribution to management practice. Figure 5-8 depicts this model and was made commercially available as the four pillars model. The reader will notice that this model is simplified from that depicted in figure 5-7 to make the model more appealing to praxis, with the primary focus being on solution delivery rather than the academic focus on theory development.

The premise of the four pillars is based upon authentic leadership (Chiaburu et al., 2011). The concept of Chiaburu et al.'s (2011) authentic leadership was present in the analysis, with leaders willing to engage in positive open dialogue with employees where the workload was buoyant.

Figure 5-8: The Commercial Model

The anti-thesis to this was that during sparse workload (Maslach and Leiter, 2008) periods, leadership closed down the open dialogue and reverted to a less 'authentic leadership' (Chiaburu et al., 2011). Therefore, the pillar of 'authentic leadership', shown in figure 5-8, has significance regarding employee engagement because it delivers transparency within the alliance. The trait of 'authentic leadership' extends itself to Jambekar's (1995) systems thinking and the need to see the bigger picture of the engineering alliance. This bigger picture thinking expands into principal agent theory (Fayezi, et al., 2012; Mitchell and Meacham, 2011) whereby the relationship of manager and employee can be better controlled. The analysis suggests that authentic leaders create an environment where the employees can thrive; the anti-thesis to this is that whilst employees are thriving and achieving rewards as bonuses, they are not thriving in their career path.

This concept of creating an environment for employees to thrive in, is akin to the second pillar of 'community' (Maslach and Leiter, 2008), as shown in figure 5-8. This pillar of 'community' is based upon all participants within the alliance working together towards common stated goals (Morwood et al., 2008). The leadership within the alliance will build a community that is devoid of parent company goals; this being underpinned by an authentic leadership style (Chiaburu et al., 2011). Analysis suggests that employees understand the basic concept of an alliance as a coming together of organisations. As such there is an acknowledgement that when the workload is plentiful, the 'community' (Maslach and Leiter, 2008) works together well and that trust, interdependence, co-ordination and communication are high (Mohr and Spekeman, 1994). However, the anti-thesis to this reported lower levels of trust, interdependence, co-ordination and communication, when the workload was less buoyant, and resulting in a fractured community, depicted within the analysis.

The analysis findings proffer a strong sense of 'community' and working together, with high levels of trust and autonomy present throughout the three case studies; the anti-thesis being that it takes time to achieve high levels, as case study #3 suggested much lower levels of trust at the start of the alliance. However, social exchange theory defines a series of exchanges that are not

necessarily money orientated. The social exchanges (Bignoux, 2006; Rahman and Korn, 2010; Rosenbaum, 2009) within the engineering alliance are considered to focus on working together without the fear of blame and punishment rather than money.

In order to lower barriers between participating organisations within the alliance community, employee voice was determined as being the third pillar of 'employee voice' within the engineering alliance, as shown in figure 5-8. This pillar is linked through the concept of 'authentic leadership' (Chiaburu et al., 2011) and a 'community spirit' that encourages thinking beyond bonuses, pay rises and promotions; these financial drivers are considered to be representative of cost transaction economics whereby the leadership (Xu and Cooper-Thomas, 2011) has to tempt the participants to participate within the 'community' (Maslach and Leiter, 2008). The anti-thesis to this is where participants freely participate within a 'community' that is devoid of blame and punishment. Participant organisations within such a community feel they can have a say in the running of the community, they can raise concerns and issues within the community because trust, interdependence, co-ordination and communication levels are high. The social exchange is the ability to raise concerns or ideas with leadership and the acknowledgement that employee voice has been heard. The completion of an exchange would be the employee voice being heard and acted upon, whereby the analysis suggested that changes were being implemented at the employees' request. However, this continues to be tempered by workload and its buoyancy, employee voice appears to dilute when the level of workload lowers, according to the analysis, resulting in a change of leadership behaviours that are less 'authentic', less transparent and not managing the alliance as a community.

'Behaviours' forms the fourth pillar of employee engagement within an engineering alliance as shown in figure 5-8. The analysis suggests that the 'community' (Maslach and Leiter, 2008) migrates from being a tight knit community, operating collaboratively with a partnership thinking (Steinhilber, 2008) style to a community that is in conflict over workload and diminishing turnover and profit (Judge and Dooley, 2006; Finlayson, 2011). The

analysis suggests that employees and organisations participating within an engineering alliance do not understand the purpose of the alliance nor each other's roles within the alliance. Whilst there is a basic understanding of an alliance, it is this understanding that forms the alliance acting as a community; the analysis also purports the deeper understanding of a participant organisations role within the alliance is less so. The findings of the analysis suggest that employees and organisations do not have a deep understanding of each other's activities within an alliance; the findings suggest that alliances are either complimentary or a clash.

By managing these four pillars, the best for project success outcomes of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994) can be controlled and maximised. Any change in these four pillars and the analysis suggests the best for project success outcomes of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994) may not be achieved. For example, if 'trust' breaks down then the relationship between the leaders and the employees becomes strained and has an effect on the 'community' through reduced 'employee voice'. If 'interdependence' was to effectively breakdown and the participating organisations no longer relied upon one another, then the alliance, as a 'community' would cease to exist and the behaviours within the 'community' would become more predatory in nature. Should the 'co-ordination' of 'workload' become an issue, perhaps due to interdependence failing, then the alliance would also cease to have a community spirit. Furthermore, the 'leadership style' would become more directed leading to conflicting behaviours in the alliance. Finally, should the leaders and the employees cease to 'communicate' in an honest and open manner, then co-ordination of 'workload' would not occur nor would there be any 'employee voice' and therefore no alliance community.

5.3   Implications of the Model

The model has implications in the field of engineering alliances, which offers future organisations that wish to participate and/or operate in engineering alliances the opportunity to develop the culture and behaviours of the alliance

differently than the way in which they tend to operate currently. The focus on employee engagement offers a significant contribution to the field of engineering alliances, which normally happens within singular organisational focus and rarely addresses the alliance community. This contribution to the alliance community recognises the uniqueness of the engineering alliance and moves the thinking away from it being just another project. Indeed, this research suggests that engineering alliances are communities of people working together towards a common goal (Morwood et al., 2008) whilst satisfying the partner organisations objectives of turnover and profit (Judge and Dooley, 2006; Finlayson, 2011). The proposed model is the first known model of its kind that addresses employee engagement in engineering alliances. It has been developed from the perspective that it is not 'a one size fits all' model and that its application to future engineering alliances may require some refinement with the model. This refinement is seen as the model continuing its advancement and its attainment of validity and utility over time through its prolonged use.

5.4   Limitations, De-Limitations & Future Directions

5.4.1   Limitations and Delimitations

A limitation of the research is that the design was not randomised; participants were well known to the practitioner-researcher, which did however aid in the collection of meaningful data for the research. The methodology for this research identified the need to manage bias and the concept of triangulation between three case studies and data collection techniques of questionnaires, interviews and observations ensured that bias was controlled for. In this sense, the non-randomisation of participants was a deliberate design feature, with the outcome yielding meaningful data that could be used to develop a model.

This research is also de-limited by its contextualisation within the engineering sector. This means that at this point in time, the proposed model and its utility and validity are constrained to the engineering sector and further constrained to the rail and energy sectors. This delimitation within the research design recognises that the gap would be too encompassing to address within a doctoral

thesis and therefore a narrower focus for the contribution to knowledge in this particular area was identified. This research is further limited by the contextualisation of the engineering sector within the United Kingdom; this renders the utility and validity of the proposed model to be untested where engineering alliances are being used by international partner organisations. Whilst this was deliberate in the research design due to the case studies and the access to meaningful data for the research, it does however pose a limitation to the proposed model being UK centric. This UK centric focus should be viewed as an enabler to future research direction and provides researchers in this field with a starting point. This research is further limited by its predominant focus on the private sector within the United Kingdom and its engineering sector. This limitation was deliberate within the research design and was intended to provide this research with a narrow focus, such that a positive contribution to knowledge could be achieved.

5.4.2 Future Directions

Having examined the results and limitations presented within this thesis, a model has been offered to determine and achieve the best for project success outcomes through employee engagement by organisations operating engineering alliances. This model is underpinned by the weaving of praxis and theory and lends itself to the engineering sector as a model for achieving best for project success outcomes within the transport and energy sectors. However, within each of these sectors there are sub-sectors that need to be addressed to determine the utility of the model, such as the highways and aviation sectors.

Further research would be required within the international engineering sector to determine how international partner organisations work with one another and whether the proposed model's utility within the international engineering sector is valid. For both the energy and transportation sectors, future direction has been proposed in the international engineering sector. When considering the international sector, the public (as in state owned organisations) and the private organisations will need to be considered further. It may be that concepts of the proposed model are not applicable to either private or public sector organisations and this assumption would need to be proven and any outcomes determined.

The future direction could be extended into other sectors such as manufacturing, with the focus on manufacturing rather than engineering. Examples of this could include the automotive or aviation sectors, where alliances are adopted to develop components. These future directions present opportunities for this research and the proposed model to be developed and tested further. It suggests that this proposed model has its recognised boundaries, but could potentially be used by other sectors to determine and achieve the best for project success outcomes through employee engagement by organisations operating alliances.

5.5   Reflection on Research

This research was undertaken as part of a professional doctoral programme, whereby critical personal reflection was a significant concept of the programme. The research topic was chosen to answer a specific question within the engineering sector; at the start of the research programme there were many assumptions that were based upon 'hunches' without little scientific thinking or bases. It was the ethnography thinking that drove the research in the early stages, until the thesis phase had completed. It was during this phase that the concept of bias became prevalent and that this could have an impact upon the final outcome of the research; there was a strong realisation that evidence needed to be collated from multiple sources to temper the ethnography thinking into an understanding of the problem role, rather than the solution and development of the model. However, the research design was sufficiently robust and managed the bias such that ethnography could be incorporated into the research and its findings. During the research design phase, it became evident that there was an opportunity to gather and collate much more evidence than would be needed for the university regulations pertaining to a doctoral thesis. The challenge was not to gather the data per se, but to ensure that during the analysis that the only data that would be used would be relevant to the model and the research objectives that were set for this research project. However, the data-set generated enables further research to be undertaken beyond the DBA programme, thus facilitating further contributions to knowledge in this field and enabling further publications related to thesis to be authored.

6 <u>Conclusions</u>

This chapter concludes the thesis and reviews the contributions that have been developed to both theory and practice, presenting the contributions to theory in the form of published symposium and conference proceedings and the contribution to management practice through the commercially developed model and its subsequent adoption with two clients under a commercial contract.

6.1 *Contribution to Theory and Practice*

This thesis makes a contribution to theory through the extension the employee engagement model of Kahn (1990) and the concepts of meaningfulness, safety and availability and the weaving of Maslach and Leiter's (2008) disengagement concepts of control, workload, recognition, reward, fairness and community with additional weaving of the leadership concepts of challenge, autonomy, self-confidence and interactions (Xu and Cooper-Thomas, 2011). Kahn's (1990) model is further extended to incorporate the employee engagement concepts of organisations, recognising that alliances are human centred constructs (Pansiri, 2005) with this extension to Khan's (1990) model provided through the incorporation of Scholl's (1981) organisational commitment.

This theory has been further melded with praxis contributions within the United Kingdom, using concepts of leadership style, employee voice and integrity (Macleod and Clarke, 2009), thus evidencing the weaving of theory and practice. This thesis makes a further advancement to management practice as it presents the first known employee engagement model for engineering alliances, offering organisations an opportunity to measure best for project success outcomes of 'trust, interdependence, co-ordination and communication' (Mohr and Spekeman, 1994). As a result of this research, the developed model has been commercially tested with major infrastructure owners within the United Kingdom, supporting the contribution to management practice.

Whilst these clients wish to remain anonymous within this thesis due to commercially sensitive reasons, it is possible to report that the model has been deployed and is currently helping both clients determine the current status of their alliance operating models. It has further informed these clients of potential

changes that need to be made within their current alliances and has seen a number of 'community' based themes being implemented. In addition, one client has requested that a leadership development programme is developed, based on the authentic leadership characteristics identified within this applied research; where there is a strong suggestion that this leadership style is not present within that particular alliance.

In summary, the researcher-practitioner will continue to research in this area and continue to advance the model as well as publish the findings, thus continuing to make further contributions to theory and practice. This will be achieved through refinement and further development of the model as it continues to be commercially tested for different alliancing scenarios.

7 <u>References</u>

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8   <u>Appendices</u>

APPENDIX A.   **The Methodological Debate**

Table 8-1: The Ontological Debate

Ontology (What do we believe exists)	Positivism	Realism	Interpretivism	Self Score	Justification
	The social world is similar to the natural world in terms of the way in which it can be studied	The social and natural worlds are different, but it is possible that the basic principles involved in the study of each is similar	The social world is very different to the natural world	Realism	The research question looks at employees, managers and organisations. Because it is split across more than one organisation there are several worlds to contend with, the social and natural worlds may have synergies that are transferable.
	The self consciousness of human beings is not a significant factor in our ability to understand social behaviour	Human consciousness is only a significant factor when people act collectively (not individually) to change the social world	Human consciousness is highly significant. People act consciously in order to create and recreate their social existence	Interpretivism	The research question centres on a team development, the motivational understanding of people and the fact that they are operating in a different environment to normal suggests that they will make the best of that environment. Literature suggests people do this.

Ontology (What do we believe exists)	Positivism	Realism	Interpretivism	Self Score	Justification
	It is possible to establish clear cause and effect relationships when studying social science behaviour	Causal relationships can be established in relation to human behaviour, but such causality tends to be limited in time and space	It is not possible to make cause and effect statements about the social world that are "true for all time". Limited – and very specific – causal statements can be made	Realism	The research question centres on relationships between organisations and between employees and managers of those organisations. The extant literature suggests that there is cause and effect that is characterized by social exchange
	The social world has an objective existence over and above human (subjective) consciousness. In this sense, reliable and valid knowledge is discovered in the same way that natural scientists are able to discover knowledge about the physical world. The task of sociology is to uncover this knowledge.	The social world has an objective existence over and above individual consciousness (we experience it as something real). However, through collective social action, it is possible to produce structural change.	The social world is experienced subjectively and has no objective existence that is independent of peoples everyday behaviour. Knowledge about the social world is created, not simply discovered	Interpretivism	Because the research question is essentially centred around behaviours, the knowledge exists and simply needs to be uncovered, i.e. people know why they behave the way they do and take the actions that they take. Their motivations are predetermined and therefore conscious.

Ontology (What do we believe exists)	Positivism	Realism	Interpretivism	Self Score	Justification
	Human behaviour is determined by the institutional relationships in society. Individual behaviour is determined by the needs of institutions – the problems they must solve in order to exist	Individual behaviour is determined by the nature of structural relationships in society. Only collective social action can alter the structure of these relationships	Human behaviour is the product of the way in which people interpret the social world. It is not determined by social structures	Interpretivism	Given the research is based on organisational structures, the institutional relationship is very important.

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Table 8-2: The Epistemological Debate

Epistemology (What proof will we accept of valid knowledge)	Positivism	Realism	Interpretivism	Self Score	Justification
	Knowledge of the social world is based upon empirical principles (that is evidence of our senses). All evidence must be capable of being tested scientifically and being shown not to be false	Empirical evidence is desirable, but not in itself sufficient. Scientific knowledge can be produced by understanding the (non-empirical) relationships that underpin the observable social world	Knowledge about the social world is based upon our ability to experience the world as others experience it. "Reality", in this sense is created by people experiencing and interpreting the world subjectively	Interpretivism	An auto-ethnographical view requires there to be a robust capture of evidence for the viva voce. It is the way one has been trained and something I don't want to deviate from.
	The task of science is to demonstrate (prove) causal relationships. That is, to quantify, the nature of patterns/regularities that exist in human behaviour	The task of science is to uncover the non observable mechanisms ("hidden social processes") that govern the ways in which people behave	The task of science is not to try to establish causal relationships/laws (something considered to be almost impossible in the social world). Rather it is to understand how and why people interpret the world in various ways. This is a very different form of science to that advanced by positivists – mainly because of the difference in subject	Realism	Because the research is focussed on behaviours and motivation, there are conscious yet hidden decisions are there, usually constructed through the social exchange mechanism.

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Epistemology (What proof will we accept of valid knowledge)	Positivism	Realism	Interpretivism	Self Score	Justification
	The main objective of positivism is to discover causal relationships between observable phenomena. Anything that is not directly observable cannot be considered as either valid knowledge or part of a valid explanation of social phenomena.	The main objective of realism is to go beyond the simple description of casual relationships to discover how such relationships are initially created. The social world "as we see and experience it" is governed by the operation of discernible social processes which we need to understand if we are to explain the observable world. This is true for both the social and natural sciences	The main objective of Interpretivism is to understand the ways in which people create and experience the social world subjectively	Realism	The research will aim to establish the mechanisms behind the behaviours and observe to conclude why the behaviours occur.

Table 8-3: The Methodology

Methodology (how can we produce reliable and valid knowledge)	Positivism	Realism	Interpretivism	Self Score	Justification
	The basic model of research is the Hypothetico-deductive model. This model argues that reliable and valid knowledge can be produced by developing hypotheses that can be later tested against empirical observations	The social world has to be understood in its totality. Studying "parts" of the social world (events such as crime, domestic labour and such like), while possible, is not particularly useful since all aspects of the social world are connected to and affected by all other parts	The Hypothetico-deductive model can be used to a point (since "reality" does not exist waiting to be discovered). If social reality is created by people going about their lives, the best we can do is to say that at a certain time and under certain conditions, this is or that is reality is evident (which in itself is similar to the way in which natural scientists tend to qualify their work). The testing of hypotheses can be done using a particular form of observation (participant observation). In this respect the researcher tries to understand the subjective experiences and	Interpretivism	

Methodology (how can we produce reliable and valid knowledge)	Positivism	Realism	Interpretivism	Self Score	Justification
	It is possible to measure and quantify human behaviour objectively and statistically. This involves breaking down the world into a series of smaller "events", variables can be isolated and manipulated	It is possible to measure and quantify human behaviour, but this is not necessarily desirable nor is it an end in itself. The main objective is to examine underlying social mechanisms that produce observable social phenomena (for example "mode of production", an underlying mechanism in relation to social class creation)	It is not possible to make meaningful empirical statements about the social world, since observable phenomena are simply the product of human meaning and interpretation.	Realism	The research question lends itself to breaking the problem down into a smaller series of events, such that is can be deconstructed and then reconstructed to manipulate the desired variables.

Methodology (how can we produce reliable and valid knowledge)	Positivism	Realism	Interpretivism	Self Score	Justification
	Personal objectivity is necessary in the research process. Value freedom is an important consideration that is desirable (if not always possible)	Personal objectivity is important but value freedom is neither nor possible desirable. This is because it is impossible to act without the influence of values and to pretend otherwise is either to simply self deceit or simply support for the existing status quo in society	Personal objectivity is necessary but it is only possible to understand subjective interpretations by becoming personally involved in the being behaviour studied. Value freedom considered is impossible	Realism	Value freedom is important in this research because understanding human behaviours needs a degree of freedom in order reach a desired outcome.

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Table 8-4: The Methods

	Positivism	Realism	Interpretivism	Self Score	Justification
Methods (how can we collect reliable and valid data)	The collection of empirical data is the primary objective. Any method that can be shown to be reliable (not influenced by the values and interpretations of the researcher) can be used	The development of theoretical knowledge about how the social world is constructed is stressed. Empirical data may aid this process, but it is not an end in itself (since such data is evidence of the effect of an underlying, non observable, causality)	The collection of non-empirical data is stressed. Any method used must attempt to understand a social phenomenon from the point of view of the social actors involved. The attempt to capture the quality of peoples experiences, meanings and interpretations is stressed.	Pragmatism	Overall outcome was positivism
	Main Methods used include Questionnaires Structured interviews Experiments Non-participant observation	Main Methods used include Observation of any type Focussed in-depth interviews	Main Methods used include Unstructured interviews Participant Observation	Pragmatism	Overall outcome was positivism

APPENDIX B.   **Questionnaires**

Doctorate in Business Administration

What is an alliance, who do I work for and what happens when the alliance ends?

How do we integrate the employee when they return to the parent company?

Alexander Finlayson
2nd July 2012

206

2nd July 2012

Dear Participant,

Doctorate of Business Administration: Research Questionnaire

This questionnaire collects information regarding business alliances and collaboration and is specific to the time you spent as part of the Metronet Alliance. It also collects information regarding the cognitive effects on the human resource upon their return to the parent company.

If you prefer to complete the questionnaire in hard copy format, please return it to the following;

Alexander Finlayson
Design Assurance Manager
Electricity Alliance Central
Oulton Road
Stone
ST15 0RS

Or you can email your completed questionnaire to alex.finlayson@atkinsglobal.com.

Please complete all questions fully choosing only the options given, unless otherwise instructed. If you don't believe the options given fit your specific answer to a question, if you don't know the answer to a question, if you'd prefer not to say or you don't think the question is relevant, then please leave that particular question unanswered.

Person we should contact if there any queries regarding your answers:

Name of Respondent:	
Telephone (landline):	
Telephone (mobile):	
Email Address:	

Thank you for taking the time to complete this questionnaire, you are contributing to a wider research theme that I am currently investigating. If you would like to remain part of this research group and view output of the results, please email me at alex.finlayson@atkinsglobal.com.

Kind regards,

Alexander Finlayson

About the Respondent

Please answer the following questions, choosing only one answer per question.

1. Please confirm your grade in the Alliance?

Grade	Answer	Grade	Answer
Executive Management	☐	*Team Leader*	☐
Senior Management	☐	*Team Member*	☐

2. Please confirm your discipline in the Alliance?

Discipline	Answer	Description [Please insert your job title]
Engineering	☐	_____
Commercial	☐	_____
Project Management	☐	_____
Non-Engineering	☐	_____
Support Staff	☐	_____

3. Please confirm your gender?

Gender	Answer	Gender	Answer
Male	☐	*Transgender*	☐
Female	☐	*Transsexual*	☐

4. Please confirm your generation?

Age Range	Answer	Age Range	Answer
18-24	☐	*46-55*	☐
25-35	☐	*56-65*	☐
36-45	☐	*65+*	☐

5. Please confirm your parent organisation?

Organisation	Answer	Organisation	Answer
Atkins	☐	*Thames Water*	☐
Balfour Beatty	☐	*EDF*	☐

Understanding the Meaning of an Alliance

Please rate your understanding of the following, choosing one answer per question.

6. Did you understand that you had Alliance Partners?

Yes ☐   *No* ☐   *Don't Know* ☐

If you answered yes to question 6 then please go to question 7, otherwise please go to question 8

7. Describe your interpretation of the Alliance Partnership?

Type	Answer	Description
Collisions Between Competitors	☐	2 or more strong partners that are also competitors
Alliances of the Weak	☐	2 or more weak partners joining forces to improve their market position
Disguised Sales	☐	1 or more weak partners combines with a strong partner, letting the strong partner compete
Bootstrap Alliances	☐	1 or more weak partners use the alliance to improve their own capabilities
Evolutions of a Sale	☐	Competitive tensions developed and one or more of the partners sells out to another
Alliances of Complimentary Equals	☐	2 strong partners and 2 complimentary partners that remain strong throughout the course of the alliance

8. The Alliance was a collaborative relationship between Partners?

Strongly Agree   *Agree*   *Neutral*   *Disagree*   *Strongly Disagree*
☐   ☐   ☐   ☐   ☐

9. What was the relationship like between partners?

a) Acquisition Thinking – attempting to acquire as larger share as possible

Strongly Agree   *Agree*   *Neutral*   *Disagree*   *Strongly Disagree*
☐   ☐   ☐   ☐   ☐

b) Partnership Thinking – attempting to work together to maximise the gain

Strongly Agree   *Agree*   *Neutral*   *Disagree*   *Strongly Disagree*
☐   ☐   ☐   ☐   ☐

10. <u>Was there any conflict between Alliance Partners?</u>

Yes ☐   *No* ☐

If you answered yes to question 10 then please go to question 11, otherwise please go to question 14

11. <u>How often did conflict occur between resources?</u>

Frequently	*Often*	*Regularly*	*Infrequently*	*Never*
☐	☐	☐	☐	☐

12. <u>Was the conflict related to protecting partner core skills?</u>

Yes ☐   *No* ☐   *Don't Know* ☐

13. <u>Was the conflict related to growing partner core skills?</u>

Yes ☐   *No* ☐   *Don't Know* ☐

14. <u>How protective was your parent company of its core skills?</u>

Extremely	*Adequate*	*Neutral*	*Tepid*	*Not Interested*
☐	☐	☐	☐	☐

15. <u>Did your parent company surrender core skills?</u>

Yes ☐   *No* ☐

16. <u>Did your parent company make tradeoffs with other partners?</u>

Yes ☐   *No* ☐

17. <u>Did your parent company learn from other partners?</u>

Yes ☐   *No* ☐

18. <u>Did you receive training during your time in the Alliance?</u>

Yes ☐   *No* ☐

19. <u>Did the Alliance provide you with long term job security?</u>

Yes ☐   *No* ☐

<u>Understanding the off shoring capability</u>

20. <u>Did your parent company make use of its off shore capability?</u>

Yes ☐   *No* ☐   *N/A* ☐

21. <u>Did you understand what the offshore capability was?</u>

Yes ☐   *No* ☐

22. <u>Did you understand the business competitive advantage of off shoring?</u>

Yes ☐   *No* ☐

23. <u>Did the off shore resources spend time in the UK?</u>

Yes ☐   *No* ☐   *Don't Know* ☐

24. <u>How did the off shore operation make you feel?</u>

Threatened ☐   *Relaxed* ☐   *Unsure* ☐   *N/A* ☐

25. <u>Would you engage with an off shoring capability again?</u>

Yes ☐   *No* ☐   *Don't Know* ☐

<u>Understanding the Difference between Parent Organisation and the Alliance</u>

26. <u>Did you work for your parent organisation prior to the Alliance?</u>

Yes ☐   *No* ☐

27. <u>Was the Alliance a legal entity similar to your parent organisation?</u>

Yes ☐   *No* ☐   *Not Sure* ☐

28. <u>Was there a different Alliance business management system in place?</u>

Yes ☐   *No* ☐   *Not Sure* ☐

29. <u>How did the Alliance business culture differ from your parent organisation?</u>

More Intense   Intense   Same   Relaxed   More Relaxed
☐   ☐   ☐   ☐   ☐

30. Were the Alliance business performance metrics explained?

Yes ☐ *No* ☐

If you answered yes to question 30 then please go to question 31, otherwise please go to question 33

31. Were the Alliance business performance metrics understood?

Yes ☐ *No* ☐

32. How relevant were the Alliance business performance metrics to you?

Extremely	*Very*	*Neutral*	*A Little*	*Not At All*
☐	☐	☐	☐	☐

33. Did you understand the strategic goals of your parent organisation in the Alliance?

Yes ☐ No ☐

Understanding who I worked for

34. Was it made clear to you who you worked for?

Yes ☐ *No* ☐

35. Remuneration

a) Were you clear who paid you?

Yes ☐ *No* ☐

b) Were you clear on the overtime policy for Alliance working?

Yes ☐ *No* ☐

c) Which bonus scheme were you a member of?

Parent Company ☐ *Alliance* ☐ *Both* ☐

36. Human Resource Management (HRM)

a) Which HRM process applied to you?

Parent Company ☐ *Alliance* ☐ *Both* ☐

b) Did you receive a bonus payment during your time with the Alliance?

Yes ☐   *No* ☐

   c) Who decided that you achieved your bonus payment?

      Parent Company Line Manager ☐   *Alliance Line Manger* ☐   *Both* ☐

   d) Did you receive a promotion during your time with the Alliance?

      Yes ☐   *No* ☐

   e) Who decided that you had achieved a promotion?

      Parent Company Line Manager ☐   *Alliance Line Manger* ☐   *Both* ☐

   f) Who measured your annual performance in the Alliance?

      Parent Company Line Manager ☐   *Alliance Line Manger* ☐   *Both* ☐

   g) Who did/would you have reported any grievances to?

      Parent Company Line Manager ☐   *Alliance Line Manger* ☐   *Both* ☐

   h) Who would have delivered any disciplinary measures that were required?

      Parent Company Line Manager ☐   *Alliance Line Manger* ☐   *Both* ☐

37. **Your feelings**

   a) Where did your loyalties lie?

      Parent Company ☐   *Alliance* ☐   *Client* ☐

   b) Did you feel like a parent company employee or an Alliance employee?

      Parent Company ☐   *Alliance* ☐   *Both* ☐

   c) Did you have enough engagement with your parent company?

      Yes ☐   *No* ☐

   d) Did you feel that you were a project specific resource?

      Yes ☐   *No* ☐

e) Was your Alliance role mirrored in the parent company?

Yes ☐   No ☐   Not Sure ☐

38. **Engaging other Alliances**

a) Did you work with other Alliances?

Yes ☐   *No* ☐

If you answered yes to question 38a then please go to question 38b, otherwise please go to question 39

b) Were you able to deal with them directly?

Yes ☐   *No* ☐

c) Did they seem less bureaucratic?

Yes ☐   *No* ☐

39. **Leadership**

a) How visible was the leadership to you?

Extremely	*Very*	*Neutral*	*A Little*	*Not At All*
☐	☐	☐	☐	☐

b) Was there much change to the leadership team?

Significant	*Lots*	*Neutral*	*A Little*	*None At All*
☐	☐	☐	☐	☐

c) Did the leadership team introduce much change to your working practices?

Significant	*Lots*	*Neutral*	*A Little*	*None At All*
☐	☐	☐	☐	☐

d) How would you rate the leadership of the Alliance?

Very Good	*Good*	*Neutral*	*Poor*	*Very Poor*
☐	☐	☐	☐	☐

40. **Working Environment**

a) Did the working environment encourage you to develop long term business relationships?

Yes ☐   *No* ☐

b) Describe the working environment?

Very Intense   *Intense*   *Normal*   *Relaxed*   *Very Relaxed*
☐   ☐   ☐   ☐   ☐

c) Was time made available for your training needs?

Yes ☐   No ☐

d) Did you feel any benefit from the training?

Yes ☐   *No* ☐

e) Did you feel that training was low priority in the Alliance?

Yes ☐   *No* ☐

f) Could you have done more to make your training needs known?

Yes ☐   *No* ☐

What happened when the Alliance came to an end

41. **Did you exit the Alliance before its natural end?**

Yes ☐   *No* ☐

42. **Did you repatriate with your parent company?**

Yes ☐   *No* ☐

43. <u>Did you join another company?</u>

Yes ☐   *No* ☐

If you answered no to question 43 then please go to question 44, otherwise please go to question 47

44. <u>Did you become self employed?</u>

Yes ☐   *No* ☐

45. <u>Did you retire?</u>

Yes ☐   *No* ☐

46. <u>Were you made redundant?</u>

Yes ☐   *No* ☐

47. <u>Did you TUPE to the ultimate client?</u>

Yes ☐   *No* ☐

48. <u>Did you work for the parent company prior to the Alliance?</u>

Yes ☐   *No* ☐

Returning to your parent company

Please answer the following questions only if you chose <u>yes</u> to question 42, choosing only one answer per question. If you chose <u>no</u> to question 42, please proceed to question 58.

49. <u>What type of work did you initially engage upon?</u>

Similar ☐   *Different* ☐

50. <u>Did you have the same job title as in the Alliance?</u>

Yes ☐   *No* ☐

51. <u>Did you have the same level of responsibility in the Alliance?</u>

Yes ☐   *No* ☐

52. <u>How did you feel?</u>

New Starter ☐   *Coming Home* ☐

53. <u>Did you receive an induction?</u>

Yes ☐   *No* ☐

54. <u>Would you have liked to receive an induction to your new company?</u>

Yes ☐   *No* ☐

55. <u>Would you have liked a full or partial induction to the parent company?</u>

Full ☐   *Partial* ☐

56. <u>How easily could you impart learnt knowledge?</u>

Very Easily	*Easily*	*Neutral*	*Difficult*	*Very Difficult*
☐	☐	☐	☐	☐

57. <u>The Eight I's</u>

a) Please rate how your individual excellence was recognised by your new line manager?

Very Easily	*Easily*	*Neutral*	*Difficult*	*Very Difficult*
☐	☐	☐	☐	☐

b) Please rate how your importance to the team was recognised by your new line manager?

Very Easily	*Easily*	*Neutral*	*Difficult*	*Very Difficult*
☐	☐	☐	☐	☐

c) Please rate how your interdependence with your co-workers was recognised by your new line manager?

Very Easily	*Easily*	*Neutral*	*Difficult*	*Very Difficult*
☐	☐	☐	☐	☐

d) Please rate how investment in your career was easy to come by?

Very Easily	*Easily*	*Neutral*	*Difficult*	*Very Difficult*
☐	☐	☐	☐	☐

e) Please rate how your integration into the parent company was recognised by your new line manager?

Very Easily	*Easily*	*Neutral*	*Difficult*	*Very Difficult*
☐	☐	☐	☐	☐

f) Please rate how easy you found it to acquire new information in your parent company?

Very Easily   *Easily*   *Neutral*   *Difficult*   *Very Difficult*

☐   ☐   ☐   ☐   ☐

g) Please rate how easy you coped with the institutionalisation of your parent company?

Very Easily   *Easily*   *Neutral*   *Difficult*   *Very Difficult*

☐   ☐   ☐   ☐   ☐

h) Please rate how easy you found it to demonstrate your integrity to your new line manager?

Very Easily   *Easily*   *Neutral*   *Difficult*   *Very Difficult*

☐   ☐   ☐   ☐   ☐

Not returning to the Parent Company

Please answer the following questions only if you chose no to question 42, choosing only one answer per question.

58. How did you feel about not returning to your Parent Company?

Resentment   *Relief*   *A New Challenge*

☐   ☐   ☐

59. How did you join your new employer?

Applied   *TUPE*   *Head Hunted*

☐   ☐   ☐

60. Was it your choice not to return?

Yes ☐   *No* ☐

61. Did you join another Alliance, e.g. Tubelines?

Yes ☐   *No* ☐

If you answered yes to question 61 then please go to question 61a, otherwise please go to question 62

a) Were you able to apply lessons learnt easily?

Yes ☐   *No* ☐

b) Were similar characteristics of working practice present?

Yes ☐ *No* ☐

c) Did you achieve a better role?

Yes ☐ *No* ☐

d) Did you achieve a similar role?

Yes ☐ *No* ☐

62. **Comparing package details**

a) Please rate your basic remuneration package

Less Money	*Same Money*	*More Money*
☐	☐	☐

b) Please rate your enhanced remuneration package

Less Value	*Same Value*	*More Value*
☐	☐	☐

c) Please state your responsibility levels

Less Responsibility	*Same Responsibility*	*More Responsibility*
☐	☐	☐

Summarising your time in the Alliance

63. **Have you achieved career advancement?**

Yes ☐ *No* ☐

64. **Have you had to re-build your career?**

Yes ☐ *No* ☐

65. **How would you rate your new role compared to the Alliance role?**

Not As Good	*Same*	*Better*
☐	☐	☐

66. **Did the Alliance accelerate your career path?**

Yes ☐ *No* ☐

67. <u>Did the Alliance decelerate your career path?</u>

Yes ☐   *No* ☐

68. <u>Do you regret having worked in the Alliance?</u>

Yes ☐   *No* ☐

<u>Doing things differently</u>

69. <u>Would you do anything different regarding working in an Alliance?</u>

Yes ☐   *No* ☐

70. <u>Please describe what you would do differently?</u>

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Any Other Information

71. **Please provide additional information that you believe may be pertinent to this research project or expands upon some of your answers provided earlier in the questionnaire.**

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Thank You

Thank you for taking the time to complete this questionnaire. Please email your completed questionnaire to alex.finlayson@atkinsglobal.com or alternatively post to:

Alexander Finlayson
Design Assurance Manager
Electricity Alliance Central
Oulton Road
Stone
ST15 0RS

Doctorate in Business Administration

Research Questionnaire

Understanding Engineering Alliances

Alexander Finlayson

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15th July 2013
Dear Participant,

Doctorate of Business Administration: Research Questionnaire

This questionnaire collects information regarding business alliances and collaboration and is specific to the **National Grid Electricity Alliance Central Substation Upgrade Programme**. It also collects information regarding the cognitive effects on the employee in readiness for their return to the parent company.

If you prefer to complete the questionnaire in hard copy format, please return it to the following;

Alexander Finlayson
Design Assurance Manager
Electricity Alliance Central
Oulton Road
Stone
ST15 0RS

Or you can email your completed questionnaire to alex.finlayson@atkinsglobal.com.

Please complete all questions fully choosing only one of the options given, unless otherwise instructed. If you don't believe the options given fit your specific answer to a question, if you don't know the answer to a question or if you'd prefer not to say then please leave that particular question unanswered.

Person we should contact if there any queries regarding your answers:

Name of Respondent:

Telephone (landline):

Telephone (mobile):

Email Address:

Thank you for taking the time to complete this questionnaire, you are contributing to a wider research theme that I am currently investigating. If you would like to remain part of this research group and view output of the results, please email me at alex.finlayson@atkinsglobal.com.

Kind regards,

Alexander Finlayson

About the Respondent

Please answer the following questions, choosing only **one answer** per question.

1. Please confirm your grade in the Alliance?

Grade	Answer	Grade	Answer
Executive Management	☐	Team Leader	☐
Senior Management	☐	Team Member	☐

2. Please confirm your discipline in the Alliance?

Discipline	Answer	Description [Please insert your job title]
Engineering	☐	
Commercial Management	☐	
Project Management	☐	
Programme Management	☐	
Construction/Site	☐	
Support Staff	☐	
Other	☐	

3. Please confirm your gender?

Gender	Answer
Male	☐
Female	☐

4. Please confirm your generation?

Age Range	Answer	Age Range	Answer
18-24	☐	25-35	☐
36-45	☐	46-55	☐
56-64	☐	65+	☐

5. Please confirm your parent organisation?

Organisation	Answer	Organisation	Answer
Atkins	☐	ABB	☐
Morgan Sindall	☐	National Grid	☐

Understanding the Meaning of an Alliance

Please answer the following questions, choosing only **one answer** per question.

6. Do you understand that you have Alliance Partners?

Yes ☐   No ☐

If you answered yes to question 6 then please go to question 7, otherwise please go to question 20

7. Describe your interpretation of the Alliance Partnership?

Type	Answer	Description
Collisions Between Competitors	☐	2 or more strong partners that are also competitors
Alliances of the Weak	☐	2 or more weak partners joining forces to improve their market position
Disguised Sales	☐	1 or more weak partners combines with a strong partner, letting the strong partner compete
Bootstrap Alliances	☐	1 or more weak partners use the alliance to improve their own capabilities
Evolutions of a Sale	☐	Competitive tensions developed and one or more of the partners sells out to another
Alliances of Complimentary Equals	☐	2 strong partners and 2 complimentary partners that remain strong throughout the course of the alliance

8. The Alliance is a collaborative relationship between Partners?

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree
☐   ☐   ☐   ☐   ☐

9. What is the relationship like between partners?

a) Acquisition Thinking – attempting to acquire as larger share as possible

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree
☐   ☐   ☐   ☐   ☐

b) Partnership Thinking – attempting to work together to maximise the gain

Strongly Agree   Agree   Neutral   Disagree   Strongly Disagree
☐   ☐   ☐   ☐   ☐

10. Is there any conflict between Alliance Partners?

Yes ☐   No ☐

11. <u>How often does conflict occur between resources?</u>

Frequently	Often	Regularly	Infrequently	Never
☐	☐	☐	☐	☐

12. <u>Is the conflict related to protecting partner core skills?</u>

Yes ☐   No ☐   Don't Know ☐

13. <u>Is the conflict related to growing partner core skills?</u>

Yes ☐   No ☐   Don't Know ☐

14. <u>How protective is your parent company of its core skills?</u>

Extremely	Adequate	Neutral	Tepid	Not Interested
☐	☐	☐	☐	☐

15. <u>Does your parent company surrender core skills?</u>

Yes ☐   No ☐

16. <u>Does your parent company make tradeoffs with other partners?</u>

Yes ☐   No ☐

17. <u>Does your parent company learn from other partners?</u>

Yes ☐   No ☐

18. <u>Have you received training during your time in the Alliance?</u>

Yes ☐   No ☐

19. <u>Does the Alliance provide you with long term job security?</u>

Yes ☐   No ☐

<u>Understanding the off shoring capability</u>

Please answer the following questions, choosing only **one answer** per question.

20. <u>Does your parent company make use of its off shore capability?</u>

Yes ☐   No ☐   Don't Have One ☐

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21. <u>Do you understand what the offshore capability is?</u>

Yes ☐   No ☐

22. <u>Do you understand the business competitive advantage of off shoring?</u>

Yes ☐   No ☐

23. <u>Do the off shore resources spend time in the UK?</u>

Yes ☐   No ☐   Don't Know ☐

24. <u>How does the off shore operation make you feel?</u>

Threatened ☐   Uneasy ☐   Relaxed ☐   No Change ☐

25. <u>Would you engage with an off shoring capability again?</u>

Yes ☐   No ☐   Undecided ☐

<u>Understanding the Difference between Parent Organisation and the Alliance</u>

Please answer the following questions, choosing only <u>**one answer**</u> per question.

26. <u>Have you worked for your parent organisation prior to the Alliance?</u>

Yes ☐   No ☐

27. <u>Is the Alliance a legal entity similar to your parent organisation?</u>

Yes ☐   No ☐   Not Sure ☐

28. <u>Is there a different Alliance business management system in place?</u>

Yes ☐   No ☐   Not Sure ☐

29. <u>How does the Alliance business culture differ from your parent organisation?</u>

More Intense   Intense   Same   Relaxed   More Relaxed
☐   ☐   ☐   ☐   ☐

30. <u>Have the Alliance business performance metrics been explained?</u>

Yes ☐   No ☐

If you answered yes to question 30 then please go to question 31, otherwise please go to question 33

31. <u>Were the Alliance business performance metrics understood?</u>

Yes ☐   No ☐

32. <u>How relevant were the Alliance business performance metrics to you?</u>

Extremely	Very	Neutral	A Little	Not At All
☐	☐	☐	☐	☐

33. <u>Do you understand the strategic goals of your parent organisation in the Alliance?</u>

Yes ☐   No ☐

<u>Understanding who I work for</u>

Please answer the following questions, choosing only <u>**one answer**</u> per question.

34. <u>Is it made clear to you who you work for?</u>

Yes ☐   No ☐

35. <u>Remuneration</u>

a) Are you clear who pays you?

Yes ☐   No ☐

b) Are you clear on the overtime policy for Alliance working?

Yes ☐   No ☐

c) Which bonus scheme are you a member of?

Parent Company ☐   Alliance ☐   Both ☐

36. <u>Human Resource Management (HRM)</u>

a) Which HRM process applies to you?

Parent Company ☐   Alliance ☐   Both ☐

b) Have you receive a bonus payment during your time with the Alliance?

Yes ☐   No ☐

c) Who decides that you achieve a bonus payment?

Parent Company Line Manager ☐   Alliance Line Manger ☐   Both ☐

d) Have you received a promotion during your time with the Alliance?

Yes ☐   No ☐

e) Who decided that you had achieved a promotion?

Parent Company Line Manager ☐   Alliance Line Manger ☐   Both ☐

f) Who measured your annual performance in the Alliance?

Parent Company Line Manager ☐   Alliance Line Manger ☐   Both ☐

g) Who would you report any grievances to?

Parent Company Line Manager ☐   Alliance Line Manger ☐   Both ☐

h) Who delivers any disciplinary measures that are required?

Parent Company Line Manager ☐   Alliance Line Manger ☐   Both ☐

37. **Your feelings**

a) Where do your loyalties lie?

Parent Company ☐   Alliance ☐   Ultimate Client ☐

b) Do you feel like a parent company employee or an Alliance employee?

Parent Company ☐   Alliance ☐   Both ☐   Neither ☐

c) Do you have enough engagement with your parent company?

Yes ☐   No ☐

d) Do you feel that you are a project specific resource?

Yes ☐   No ☐

e) Is your Alliance role mirrored in the parent company?

Yes ☐   No ☐

38. <u>Engaging other Alliances</u>

a) Have you engaged with other Alliances to deliver your role in this Alliance?

Yes ☐   No ☐

If you answered yes to question 38a then please go to question 38b, otherwise please go to question 39

b) Are you able to deal with them directly?

Yes ☐   No ☐

c) Do they seem less bureaucratic?

Yes ☐   No ☐

39. <u>Leadership</u>

a) How visible is the Alliance leadership to you?

Extremely	Very	Neutral	A Little	Not At All
☐	☐	☐	☐	☐

b) Has there been much change to the leadership team?

Significant	Lots	Neutral	A Little	None At All
☐	☐	☐	☐	☐

c) Does the leadership team introduce much change to your working practices?

Significant	Lots	Neutral	A Little	None At All
☐	☐	☐	☐	☐

d) How would you rate the leadership team of the Alliance?

Very Good	Good	Neutral	Poor	Very Poor
☐	☐	☐	☐	☐

40. Working Environment

a) Does the working environment encourage you to develop long term business relationships?

Yes ☐ No ☐

b) Describe the working environment?

Very Intense   Intense   Normal   Relaxed   Very Relaxed
☐   ☐   ☐   ☐   ☐

c) Is time made available for your training needs?

Yes ☐ No ☐

If you answered yes to question 40c then please go to question 40d, otherwise please go to question 40e

d) Do you feel any benefit from the training?

Yes ☐ No ☐

e) Do you feel that training is a low priority in the Alliance?

Yes ☐ No ☐

If you answered yes to question 40e then please go to question 40f, otherwise please go to question 41

f) Can you do more to make your training needs known?

Yes ☐ No ☐

Understanding the effects of co-location

Please answer the following questions, choosing only **one answer** per question.

41. Does the Alliance operate co-located offices?

Yes ☐ No ☐

If you answered yes to question 41 then please go to question 42, otherwise please go to question 55

42. <u>Do you work in a co-located office, on average, more than 3 days per week?</u>

Yes ☐　　No ☐

43. <u>Is there more than one co-located office location?</u>

Yes ☐　　No ☐

44. <u>Do you understand the reason for more than one co-located office location?</u>

Yes ☐　　No ☐

a) Please describe your understanding of the reasons for more than one co-located office location

1. _____
2. _____
3. _____

b) In your opinion, are the split locations entirely necessary?

Yes ☐　　No ☐

c) In your opinion, could the split locations being merged into one location?

Yes ☐　　No ☐

45. <u>Defining the co-located office(s)</u>

a) Is the co-located office located in a partner organisation building?

Yes ☐　　No ☐

b) Are partner brand logo's present?

Yes ☐   No ☐

c) Are partner office policies adopted by the Alliance?

Yes ☐   No ☐   Not Sure ☐

d) Do you have to sign into the office as a visitor?

Yes ☐   No ☐

e) Is there a common IT infrastructure?

Yes ☐   No ☐

46. How many floors in the office does the Alliance occupy?

One ☐   Two ☐   Three ☐   Four ☐   Five + ☐

47. Are teams split across multiple floors?

Yes ☐   No ☐

48. How is the office layout arranged?

Completely Open Plan   ☐
Open Plan With Managers Offices   ☐
Completely Team Bays   ☐
Completely Team Bays With Managers Offices ☐

49. Office arrangements

a) How would you rate the layout of the office?

Very Good   Good   Neutral   Poor   Very Poor
☐   ☐   ☐   ☐   ☐

b) How would you rate your desk space?

Very Good   Good   Neutral   Poor   Very Poor
☐   ☐   ☐   ☐   ☐

c) How would you rate the IT systems?

Very Good   Good   Neutral   Poor   Very Poor
☐   ☐   ☐   ☐   ☐

d) How would you rate the meeting rooms?

Very Good	Good	Neutral	Poor	Very Poor
☐	☐	☐	☐	☐

e) How would you rate the meeting room facilities?

Very Good	Good	Neutral	Poor	Very Poor
☐	☐	☐	☐	☐

50. <u>Understanding the IT arrangements</u>

a) Is there a common IT infrastructure on a shared common server?

Yes ☐   No ☐

b) Do you have a specific Alliance log-on?

Yes ☐   No ☐

c) Do you have an Alliance specific email address?

Yes ☐   No ☐

d) How would you rate the IT network facilities?

Very Good	Good	Neutral	Poor	Very Poor
☐	☐	☐	☐	☐

e) Do you use a web based document repository?

Yes ☐   *No* ☐

If you answered no to question 50e then please go to question 50g, otherwise please go to question 50f

f) How would you rate the web based document repository?

Very Good	Good	Neutral	Poor	Very Poor
☐	☐	☐	☐	☐

g) How would you rate the printing facilities?

Very Good	Good	Neutral	Poor	Very Poor
☐	☐	☐	☐	☐

h) Do you share landline telephones?

Yes ☐   No ☐

i) How would you rate the telephonic facilities?

Very Good   Good   Neutral   Poor   Very Poor
☐   ☐   ☐   ☐   ☐

51. Does the office environment promote partnership working?

Yes ☐   No ☐

If you answered yes to question 51 then please go to question 51a, otherwise please go to question 51b

a) If yes, please summarise the top three reasons why

1. _____
2. _____
3. _____

b) If no, please summarise the top three reasons why

1. _____
2. _____
3. _____

52. Can you easily identify the parent company of your co-workers?

Yes ☐   No ☐

If you answered yes to question 52 then please go to question 52a, otherwise please go to question 53

a) If yes, please summarise the top three reasons how you can

1. _____
2. _____
3. _____

53. How are the teams in the office set up?

Parent Company Centric ☐   Multiple Partner Representation ☐

a) Does it impact upon your ability to deliver your job successfully?

Yes ☐   No ☐

b) If yes, please summarise the top three impact reasons

1. _____
2. _____
3. _____

54. <u>How would you rate the team setup in the office?</u>

Very Good	Good	Neutral	Poor	Very Poor
☐	☐	☐	☐	☐

a) Would you set the office up differently?

Yes ☐   No ☐

b) If yes, please summarise the top three suggestions

1. _____
2. _____
3. _____

Working remotely from the co-located office

Please answer the following questions, choosing only **<u>one answer</u>** per question.

55. <u>How often do you visit the co-located office?</u>

Frequently	Often	Regularly	Infrequently	Never
☐	☐	☐	☐	☐

56. <u>Are you geographically constrained from working in the co-located office?</u>

Yes ☐   No ☐

a) Is the constraint imposed by your parent organisation?

Yes ☐   No ☐

b) Does it impact upon your ability to deliver your job successfully?

Yes ☐   *No* ☐

c) If yes, please summarise the top three impact reasons

1. _____
2. _____
3. _____

d) Is the constraint imposed personally, as a preference to work nearer to home?

Yes ☐   No ☐

If you answered yes to question 56d then please go to question 56e, otherwise please go to question 57

e) Does it impact upon your ability to deliver your job successfully?

Yes ☐   No ☐

If you answered yes to question 56e then please go to 56f otherwise please go to question 57

f) If yes, please summarise the top three impact reasons

1. _____
2. _____
3. _____

57. **What is your primary reason for visiting the co-located office?**

Meetings ☐   Group Work Based Task ☐   Scheduled Work Day ☐

58. **Do you attend the co-located office on set days per week?**

Yes ☐   No ☐

59. **Understanding the remote IT arrangements**

a) Is there a common IT infrastructure on a shared common server that you can access remotely?

Yes ☐   No ☐

b) Do you have a specific Alliance log-on to access the IT infrastructure remotely?

Yes ☐   No ☐

c) Do you have an Alliance specific email address?

Yes ☐   No ☐

d) How would you rate the IT network facilities from a remotely operating perspective?

Very Good	Good	Neutral	Poor	Very Poor
☐	☐	☐	☐	☐

e) Do you use a web based document repository?

Yes ☐   No ☐

f) How would you rate the web based document repository?

Very Good	Good	Neutral	Poor	Very Poor
☐	☐	☐	☐	☐

60. Integrating in the co-located office

a) How welcome are you made to feel?

Very Welcome	Welcome	Neutral	Lukewarm	Not Welcome
☐	☐	☐	☐	☐

b) Can you find a desk easily?

Yes ☐   No ☐

c) How easily can you connect to the co-located IT infrastructure?

Very Easily	Easily	Neutral	Difficult	Very Difficult
☐	☐	☐	☐	☐

61. Does the office environment promote partnership working?

Yes ☐   No ☐

a) If yes, please summarise the top three reasons why

1. _____
2. _____
3. _____

b) If no, please summarise the top three reasons why

1. _____
2. _____
3. _____

62. Can you easily identify the parent company of your co-workers?

Yes ☐   No ☐

If you answered yes to question 62 then please go to question 62a, otherwise please go to question 63

a) If yes, please summarise the top three reasons how you can

1. _____
2. _____
3. _____

63. How are the teams in the office set up?

Parent Company Centric ☐   Multiple Partner Representation ☐

a) Does it impact upon your ability to deliver your job successfully?

Yes ☐   No ☐

If you answered yes to question 63a then please go to question 63b, otherwise please go to question 64

b) If yes, please summarise the top three impact reasons

1. _____
2. _____
3. _____

64. How would you rate the team setup in the office?

Very Good	Good	Neutral	Poor	Very Poor
☐	☐	☐	☐	☐

a) Would you set the office up differently?

Yes ☐   No ☐

b) If yes, please summarise the top three suggestions

1. _____
2. _____
3. _____

Understanding The Team Management Styles

Please answer the following questions, choosing only **one answer** per question.

65. How would you describe the style of team management adopted by the Alliance?

Self Managing ☐   Matrix Management ☐

66. Please rate the self managing criterion for the following;

a) Does your team leader / manager trust the team to deliver the job with minimal input from them?

Yes ☐   No ☐

b) Is there a high level of trust within your team between co-workers?

Yes ☐   No ☐

c) Is there a high level of individual autonomy in your team?

Yes ☐   No ☐

d) In your opinion, which performance description is closely associated with your team?

High Performance   Medium Performance   Low Performance
☐   ☐   ☐

67. Please rate the matrix management criterion for the following;

Which style of Matrix Management has the Alliance adopted?

Type	Answer	Description
Project Matrix	☐	Refers to a situation in which the project manager has direct authority to make decisions about personnel and work flow activities
Functional Matrix	☐	Occurs when the project manager's role is limited to coordinating the efforts of the functional groups involved
Balanced Matrix	☐	One in which the project manager is responsible for defining what needs to be accomplished while the functional managers are concerned with how it will be accomplished

a) Are there conflicts regarding overlapping authority within the Alliance?

Yes ☐   No ☐

b) Are there conflicts regarding overlapping authority between the Alliance and parent Organisations?

Yes ☐   No ☐

c) Are there any visible power struggles in your team?

Yes ☐   No ☐

d) How would you rate the information flow in your team?

Very Good	Good	Neutral	Poor	Very Poor
☐	☐	☐	☐	☐

Defining Your Interpretation Of The Programme Within The Alliance

Please answer the following questions, choosing only **one answer** per question.

68. Are schemes/projects using a WBS within the programme?

Yes ☐   No ☐

69. Please rate the quality of the overall programme of works for the Alliance portfolio

Very Good   Good   Neutral   Poor   Very Poor

$\square$ $\square$ $\square$ $\square$ $\square$

a) Is the programme too ambitious

Yes $\square$ No $\square$

70. Please rate the quality of the programme for the individual schemes/projects contained within the portfolio

Very Good	Good	Neutral	Poor	Very Poor
$\square$	$\square$	$\square$	$\square$	$\square$

b) Is the programme too ambitious

Yes $\square$ No $\square$

71. Does the programme affect the output of the solution delivered?

Yes $\square$ No $\square$

72. Please rate the consequences of the programme on the solution

a) Affect on quality related to output

Enhanced	Good	Nil	Poor	Very Poor	Don't Know
$\square$	$\square$	$\square$	$\square$	$\square$	$\square$

b) Affect on cost with respect to the target cost

Over Budget	Nil	Under Budget	Don't Know
$\square$	$\square$	$\square$	$\square$

73. Is the programme resource loaded to enable efficient deployment of resources?

Yes $\square$ No $\square$

74. Do you believe that resources are optimised within the Alliance?

Yes $\square$ No $\square$

If you answered no to question 74 then please go to question 74a, otherwise please go to question 75

a) If no, please summarise the top three suggestions to improve optimisation

1. _____

2. _____

3. _____

75. <u>Do you understand the concept of earned value management?</u>

Yes ☐   No ☐

If you answered yes to question 75 then please go to question 76, otherwise please go to question 77

76. <u>Does the programme allow for earned value project management to be deployed?</u>

Yes ☐   No ☐

Defining Your Interpretation of Risk Management In The Alliance

Please answer the following questions, choosing only <u>**one answer**</u> per question.

77. <u>Your understanding of Risk Management</u>

a) Do you understand the purpose of risk management within a project and scheme portfolio?

Yes ☐   No ☐

If you answered yes to question 77a then please go to question 77b, otherwise please go to question 81

b) Could more be done by the Alliance management to explain the purpose of risk management?

Yes ☐   No ☐

78. <u>Are Risk Management workshops held within the Alliance?</u>

Yes ☐   No ☐

a) In your opinion, do these add value?

Yes ☐   No ☐

b) Are they attended regularly by the same professionals for all schemes in the Alliance portfolio?

Yes ☐   No ☐

79. <u>Could they be run more efficiently?</u>

Yes ☐   No ☐

80. <u>Is the output realistic of what would be expected as the industry norm?</u>

Yes ☐   No ☐

<u>Defining Time Management In The Alliance</u>

Please answer the following questions, choosing only <u>**one answer**</u> per question.

81. <u>Do you feel you have enough time during your working day to plan your workload time efficiently?</u>

Yes ☐   No ☐

82. <u>Do you feel your role is impacted by the time constraint of the programme?</u>

Yes ☐   No ☐

83. <u>Defining your position in the Time Management Matrix</u>

a) Are you are mainly delivering deadline driven projects?

Yes ☐   No ☐

b) Are you mainly involved in relationship building, planning or recognising new opportunities?

Yes ☐   No ☐

c) Does your working day mainly consist of meetings?

Yes ☐   No ☐

d) Does your working day consist of dealing with time wasters?

Yes ☐   No ☐

84. <u>Do you feel able to plan your time management any better?</u>

Yes ☐   No ☐

If you answered yes to question 84 then please go to question 84a, otherwise please go to question 85

a) If yes, please summarise the top three suggestions

1. _____
2. _____
3. _____

Understanding the Meetings You Are Required To Attend

Please answer the following questions, choosing only **one answer** per question.

85. Describe the frequency of the meetings you attend?

Frequently	Often	Regularly	Infrequently	Never
☐	☐	☐	☐	☐

86. Do you feel that the level of meetings is appropriate for the scheme/project?

Yes ☐   No ☐

87. Do you feel able to participate in all meetings you attend?

Yes ☐   No ☐

88. How are meetings usually conducted?

Face to Face	Teleconference	Video Conference
☐	☐	☐

89. Where are meetings usually chaired from?

Co-located Office	Site Office	Both
☐	☐	☐

90. Could something be done to improve the efficiency of meetings?

Yes ☐   No ☐

If you answered yes to question 90 then please go to question 90a, otherwise please go to question 91

a) If yes, please summarise the top three suggestions

1. _____
2. _____
3. _____

Your Ability To Network In The Alliance

Please answer the following questions, choosing only **one answer** per question.

91. **How easy do you find it to network in the Alliance?**

Very Easy   Easy   Neutral   Difficult   Very Difficult

☐   ☐   ☐   ☐   ☐

92. **Is networking encouraged by your senior management?**

Yes ☐   No ☐

93. **Are there social events where you can network in a non business environment?**

Yes ☐   No ☐

94. **Are you collaborating with other alliance partners on non alliance projects?**

Yes ☐   No ☐

95. **Is your parent organisation collaborating with other alliance partners on non alliance projects?**

Yes ☐   No ☐

Understanding Change Management In The Alliance

Please answer the following questions, choosing only **one answer** per question.

96. **What is your understanding of change management?**

Right Sizing   Restructuring   Technology Change   Process Change

☐   ☐   ☐   ☐

97. **Have you seen any evidence of change management in the Alliance?**

Yes ☐   No ☐

If you answered yes to question 97 then please go to question 98, otherwise please go to question 100

98. What Types of Change Management have you seen in the Alliance?

Type	Answer	Description
Incremental Change	☐	Changes made in small steps over time
Radical Change	☐	Changes brought about by benchmarking or business process re-engineering
Continuous Change	☐	Changes made to live projects that are introduced to minimise disruption to the programme and projects
Step Change	☐	Changes made to live projects that are introduced with managed disruption to the programme and projects
Participative Change	☐	Change brought about via consultation to those affected by the change
Directed Change	☐	Change brought about through the top down approach

99. Which type of change response are you?

Type	Answer	Description
Change Agent	☐	Likely to respond actively to change and see it as an opportunity
Bystander	☐	Likely to respond passively to change and see it as an opportunity
Resistor	☐	Likely to respond actively to change and see it as a threat
Traditionalist	☐	Likely to respond passively to change and see it as a threat

Your Role & Feelings in the Alliance

Please answer the following questions, choosing only **one answer** per question.

100.   The Eight I's

a) Please rate how your individual excellence is recognised by your line manager?

Very Easily	Easily	Neutral	Difficult	Very Difficult
☐	☐	☐	☐	☐

b) Please rate how your importance to the team is recognised by your line manager?

Very Easily	Easily	Neutral	Difficult	Very Difficult
☐	☐	☐	☐	☐

c) Please rate how your interdependence with your co-workers is recognised by your line manager?

Very Easily   Easily   Neutral   Difficult   Very Difficult

☐   ☐   ☐   ☐   ☐

d) Please rate how investment in your career is easy to come by?

Very Easily   Easily   Neutral   Difficult   Very Difficult

☐   ☐   ☐   ☐   ☐

e) Please rate how your integration into the Alliance is recognised by your line manager?

Very Easily   Easily   Neutral   Difficult   Very Difficult

☐   ☐   ☐   ☐   ☐

f) Please rate how easy you found it to acquire new information in the Alliance?

Very Easily   Easily   Neutral   Difficult   Very Difficult

☐   ☐   ☐   ☐   ☐

g) Please rate how easily you have coped with the institutionalisation of the Alliance?

Very Easily   Easily   Neutral   Difficult   Very Difficult

☐   ☐   ☐   ☐   ☐

h) Please rate how easy you found it to demonstrate your integrity to your line manager?

Very Easily   Easily   Neutral   Difficult   Very Difficult

☐   ☐   ☐   ☐   ☐

101. <u>How long have you worked in the Alliance?</u>

<1 Year   1-2 Years   2-3 Years   3-4 Years   4-5 Years   5+ Years

☐   ☐   ☐   ☐   ☐   ☐

102. <u>Have you held more than one role in the Alliance?</u>

Yes   ☐   No   ☐

If you answered yes to question 102 then please go to question 102a, otherwise please go to question 103

a) How many official roles have you held in the Alliance?

2	3	4	5	>5
☐	☐	☐	☐	☐

b) How often have you sought to change role?

6 Months	12 Months	18 Months	24 Months	>24 Months
☐	☐	☐	☐	☐

103. **In your opinion, what is the maximum length of service an employee should serve before suffering burnout in the role?**

<1 Year	1-2 Years	2-3 Years	3-4 Years	4-5 Years	5+ Years
☐	☐	☐	☐	☐	☐

104. **Please rate your level of happiness in your current role in the Alliance?**

Extremely	Very	Neutral	A Little	Not At All
☐	☐	☐	☐	☐

105. **Are you looking for a promotion in the Alliance?**

Yes ☐   No ☐

a) Are you being supported by your line manager?

Yes ☐   No ☐

b) Do you feel it is achievable in the Alliance?

Yes ☐   No ☐

c) Please rate how easily you believe you can achieve the promotion?

Very Easily	Easily	Neutral	Difficult	Very Difficult
☐	☐	☐	☐	☐

106. **Have you received any training during your time in the Alliance?**

Yes ☐   No ☐

107. <u>**How easily can you get your training needs approved?**</u>

Very Easily   Easily   Neutral   Difficult   Very Difficult

☐   ☐   ☐   ☐   ☐

108. <u>**How would you define the training?**</u>

Job Specific to the Alliance   ☐   Career Advancement   ☐   Both   ☐

109. <u>**Remuneration during your time with the Alliance**</u>

a) Do you feel that you are adequately paid for the role that your perform in the Alliance?

Yes   ☐   No   ☐

b) Do you feel that your remuneration is equal to the market value outside the Alliance?

Yes   ☐   No   ☐

110. <u>**Defining your personal value stance in the Alliance**</u>

a) Are you spouse centred?

Yes   ☐   No   ☐   Your direction comes from your own needs and wants as well as those from your spouse

b) Are you family centred?

Yes   ☐   No   ☐   Your family is scripting your source of correct attitudes and behaviours

c) Are you work centred?

Yes   ☐   No   ☐   You make your decisions based on the needs of your work

d) Are you possession centred?

Yes   ☐   No   ☐   You make your decisions based on what will protect and improve your possessions

e) Are you friend centred?

Yes   ☐   No   ☐   Your decisions are based on what your friends will think about the outcome

f) Are you enemy centred?

Yes   ☐   No   ☐   You react to your enemies actions to maintain or improve the status quo

g) Are you church centred?

Yes ☐   No ☐   You react to how others will compare your actions to church readings

h) Are you self centred?

Yes ☐   No ☐   You view the world on how it affects you

Feelings About Your Role In The Alliance Coming To An End

Please answer the following questions, choosing only **one answer** per question.

111.   **Are you looking to exit the Alliance before its natural end?**

Yes ☐   No ☐

112.   **Does the Alliance provide you with long term job security?**

Yes ☐   No ☐

113.   **How will you feel when your role in the Alliance comes to an end?**

Resentment   Relief   A New Challenge
☐   ☐   ☐

Summarising your time in the Alliance

Please answer the following questions, choosing only **one answer** per question.

114.   **Have you achieved career advancement?**

Yes ☐   No ☐

115.   **Have you had to re-build your career?**

Yes ☐   No ☐

116.   **Has the Alliance accelerated your career path?**

Yes ☐   No ☐

If you answered no to question 116 then please go to question 117, otherwise please go to question 118

117.   **Has the Alliance decelerated your career path?**

Yes ☐   *No* ☐

118. **Do you regret having worked in the Alliance?**

Yes   ☐   No   ☐

Doing things differently

Please answer the following questions, choosing only **one answer** per question.

119. **Would you do anything different regarding working in an Alliance?**

Yes   ☐   No   ☐

If you answered yes to question 119 then please go to question 120, otherwise please go to question 121

120. **Please describe what you would do differently?**

_____

_____

_____

_____

_____

_____

_____

_____

Any Other Information

121. **Please provide additional information that you believe may be pertinent to this research project or expands upon some of your answers provided earlier in the questionnaire.**

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Thank You

Thank you for taking the time to complete this questionnaire. Please email your completed questionnaire to alex.finlayson@atkinsglobal.com or alternatively post to:

Alexander Finlayson
Design Assurance Manager
Electricity Alliance Central
Oulton Road
Stone
ST15 0RS

APPENDIX C. **Sample Interview**

Date: 24 June

Interviewee 001

AF   Alex Finlayson

I   Interviewee

…   Sentence stops mid way

***   Tape inaudible/not clear

Speaker	Transcription	Comments
AF	OK so we'll now record Mike, so, first question I'd like to ask you is 'what is your understanding of an Alliance'?	
I	An Alliance? Right, it's a loose grouping of companies who come together for if you like, a common goal. Excuse my stomach rumbling.	
AF	No problem.	
I	But I mean in this case we were looking to build sub-stations we were honestly looking to make money out of that at the end of... but it's had, as I say, very much a loose grouping role that are more sort of tightly knit organisation as you might need to set up, joint venture companies and things like that.	
AF	So do you feel that all of our employees that were in this Alliance, do you think that they understood an Alliance was, did they view the Alliance in the same way as you do, did they have a different view?	
I	Some certainly didn't. Sort of early days we had, I mean when the Alliance was first set up, we had quite a lot of kind of change workshops and culture change workshops, and certain people just didn't want to buy into that approach, kind of work together with the different companies, so often the relationship that they had before the Alliance they kind of preferred that. Some were perhaps slightly slighted to a certain extent, they didn't, I'm not sure they ever really got into the concept, never understood the concept, working with other organisations in kind of multi disciplinary teams.	
AF	They feel more straight away from day one with that they were in a client contractor relationship. And has that still perpetuated itself up to date *** do you think or was it... obvious to yourself...	
I	No I think that people who were of that mindset have gone and done something else.	
AF	OK.	
I	Those who were quite happy within an Alliance environment.	
AF	Do you think our managers and directors, and the sort of senior people, do you think they understand the meaning of the Alliance in the same way as...	

Speaker	Transcription	Comments
I	I think they understand the concept, I'm not sure they understand the kind of day-to-day detail quite as well. Because obviously they're not here all the time so, I mean certainly in the early days we had an Alliance, or we had an Atkins person within the Alliance management team, which certainly helped. That after probably two years, that ceased, and we did to a large extend feel a little bit cut adrift and didn't get a great deal of direction from management.	
AF	When you talk about feeling cut adrift is that cut adrift from the Atkins management or the Alliance itself?	
I	Yeah. Because we never saw anybody from Atkins you know we just used to come in and kind of get on and just work within the Alliance you know.	
AF	OK. So you felt more engaged for that period of your time in the Alliance with other partner organisations is that fair to say? Were you getting more direction from the Alliance management team but with no parent organisation representative that actually...	
I	I mean we've still the overriding 'we're in here you know a: to do a job and b: to try and to lever out as much business as we can out of it' and we missed, I'll be honest, we did miss a few opportunities because I'd put the right people in the right places and we didn't always know on the ground that those opportunities were around there.	
AF	So we could have benefitted from having someone inside the Alliance management team to engage...	
I	M and E's the obvious you know example of the right person to be in there to build a... that could have been a whole bloody business within it.	
AF	OK. So are you, you mentioned you're aware of the different types of Alliances and the contract and the differences between the joint venture and a partnership and so on and so forth. Remind me again how do you describe this Alliance is it, you said, a loose coming together?	
I	It's quite a loose coming together because although there are contractual arrangements there isn't, there's strict contractual arrangements you'd have it was a proper kind of joint venture type company, much more looser grouping.	
AF	And do you think that that muddies the water a little bit because it encourages organisations to act individually rather than in this collaborative way we're led to believe?	

Speaker	Transcription	Comments
I	I think it has to some extent yes. And I think the definitions that were set out early days as to who, what was who's workload not always being adhered to why it's been accurate and there was, certainly early days, there was quite a lot of blame and it was aimed at Atkins – 'oh Atkins are holding everything up' and when you actually chased it back it was absolute bollocks you know. But I mean it even got put up on slides at away days and things like this that the Alliance work well Atkins are holding everything up, assurance is always late?	
AF	Really?	
I	Oh God yeah this was before your time.	
AF	So...	
I	And we were kind of 'Hold on a minute OK we're holding you up, you're delivering the documents six weeks late and we're holding you up, I think you perhaps need to go back and look at the fact that you're supplying all the documents late', you know it's things like that. And that I think we eventually got over that, that kind of hump and people accepted that.	
AF	You think having an Alliance Manager in place would have negated that, do you think that there was advantage taken during that period?	
I	Yes I think we lost our way, I think we lost our management team by it...	
AF	Effectively lost our voice there?	
I	Oh very much so yeah.	
AF	We had a group of people working inside the Alliance that were just meant to *** Atkins and no direction or leadership at the Alliance?	
I	We didn't have a senior person there to... I mean very often it was me who was the senior person who was kind of fighting battles you know and I didn't want it.	
AF	And who supported you?	
I	Certainly Sarah did and the other members of the team who were around.	
AF	And various...	
I	Of course there weren't that many of us there you see. The rest were elsewhere. So they were ***	
AF	OK why do you think there was a lack of senior interest inside the Alliance?	
I	I think we had a very, like a flat structure reporting to one person, and I'm not sure that that gave you the opportunities to have a slightly more tiered structure with somebody actually sat within the Alliance that 'Right you're managing the Alliance' and that was then managed by this one person unless they had time to do it all.	

Speaker	Transcription	Comments
AF	And do you think they left you exposed to a bit of conflict inside the Alliance do you feel that you were dealing with day to day conflict?	
I	Yes.	
AF	And how would you describe that conflict or even describe conflict of sort?	
I	It was, any sort of complaints that there were, were kind of channelled, probably in a lot of cases, through me or in some cases Sarah, just saying 'well there's an issue here'. I wasn't, at that time, in a position where it should be the sort of things that I was dealing with, there should have been somebody on the management team that should have been dealing with those sort of issues but I, we dealt with them as best we could. You see one of the problems was as well, the team leaders that we had which was Phil Kendrick and Anthony Williams, of course one was then to stay in Epsom the other one past up in .... and they weren't here either so there's a problem with not being co-located that didn't help matters.	
AF	That co-location probably led to a bit of out of sight is out of mind really because you'd ***	
I	Lack of it yes. Alright OK.	
AF	And do you think that perhaps this conflict was like... that led to the unequal split of workload between partners or ...	
I	No I think that, that started from day one didn't it with the triple A agreement and the breakdown of who was doing what...	
AF	Because traditionally it's always been difficult here hasn't it, to get additional work outside that works but it appeared that the other partners seem quite happy to transfer to manage the work themselves or creating new workload does appear doesn't it and we don't seem to benefit from that do we?	
I	I don't know, we've not done too badly. There's been bits where they've really struggled. I mean, good examples: Stag *** I mean we made quite a lot out of Stag *** because we'd got something there that we came up with an idea that saved the Alliance and National Grid and I don't think they could have done that without us on that particular incident.	
AF	That's as I say consulting with you more as in, do you feel that they're more perceived as the innovators?	
I	No I'm not sure we ever have been no. No, I'm not sure we've ever been fully appreciated for some of the things that we've...	
AF	So your perception is we have innovated over the six years and done all sorts of ***. Do you feel that then there's been a bit of a protection of workload from different partners?	
I	Oh yes.	

Speaker	Transcription	Comments
AF	And that comes out in every sort of *** related the stand down phase do you feel that it's always been re***	
I	No doubt about that at all. I mean to the point that Morgan Sindle set up their own site department on ***	
AF	That looked a little bit like the conflict and trust there sort of appears there may be a lack of trust there, being partners do you think that's been generally the relationship that's based around... you have a feeling sometimes of a lack of trust but is that just a perception?	
I	I think there is some lack of trust and lack of understanding but I think partners have always been keen to make sure they held onto their part and perhaps getting there... as I say we've had one or two opportunities where there were... they didn't have the expertise and we managed to get them in, and I'll come back to it again M and E that was a really good opportunity and we could have probably two, three, four people in here and we missed that.	
AF	Do you think that our Alliance partners actually operate a culture of power, and demonstrate that power to their other partners do you feel that one organisation is slightly...	
I	I think ABB are definitely the dominant organisation, because they've got the bigger turnover, but I think Morgan Sindle have played their cards pretty well and had looked the Alliance I think would be the Alliance, but no maybe even National Grid they've used the Alliance as a vehicle to examples of having like set ups months before they need them, These are the sort of things, and I'm surprised the Grid, and I suppose the management team haven't clamped down on why are we doing this, why are we doing this, why are we setting up, and the standard of offices we had in the early days were palatial you know, offices like this!	
AF	OK, and sort of just while you're on that sort of milk and the National Grid a little bit, what do you think National Grid's role in all this Alliance has been over the last five years up until they exited recently. Did they have a passive role or were they quite...?	

Speaker	Transcription	Comments
I	I think they had a... quite the right word, in some respects from a contractual point of view they were not a well educated client, from a technical point of view yes. But from a contractual point of view they set up a contract which I don't think they knew how to run and I don't think they had the expertise within their client organisation to be able to run it. It ran very much on a trust basis I think. Probably because they had National Grid people within the management organisation. But, I mean some of those people within the management organisation were looking at the Alliance as a business and looking at how to make sure that we are the better business based on the point of view of the amount of turnover, the profit they make you know. I think there were CEs and the like put through that I saw go thought that I would not have signed off as an E6E project, and signed off without any question.	
AF	So they were quite a trusting organisation in that sense and that kind of leads to this milking assurance agreement so do you sort of see that as... are you seeing power then at the organisation level as well as people levels, and what I mean by, as you do, as an organisational level do you see that power coming out of management meetings and then down at the delivery level do you see demonstrating their level of power and authority in business on the Alliance?	
I	Yes, you find that does come through.	
AF	And do you find that disruptive to your day to day tasks, getting in the way of what you need to do, the lack of having an Atkins voice at that level.	
I	Lack over Atkins was at that level definitely. You then have to deal with the issues further down the line.	
AF	And because you're co-located here you... they always come and find you first.	
I	Yeah.	
AF	Right OK.	
I	But I mean again they're looking to maximise their return which is you know I don't have an issue with that but sometimes perhaps at the... you know they will say well we're going to do this when it's not always the best thing to do, but they've decided that it's the best thing from their point of view to do.	
AF	Yeah, how does that make you feel when that decisions made and you know that our voice has not been part of that?	
I	We have sometimes argued and said hang on that's not the right way to go about it, and we sometimes get heard and sometimes...	
AF	Win some you lose some?	
I	Yeah.	

Speaker	Transcription	Comments
AF	OK those that you win obviously gives you a sense of satisfaction that you've added some value there clearly but though you feel that the values not been added and you've lost those arguments, how does that make you feel then?	
I	Well it's a bit frustrating but you have to make it...	
AF	So basically do you feel a bit *** about it?	
I	We shouldn't be doing this...	
AF	Sort of if I could make that word up.	
I	I mean sometimes it's not always the Alliance's fault, sometimes Grid can be their own worst enemy client...	
AF	So it can be client driven sometimes...	
I	It's not only National Grid, other clients do this. And the constant bloody change National Grid are on a load of money, I mean I always harp back to Kirby SGT1 but what we gave National Grid as a product there but was not what we would have given them had we of, had they have made the kind of scope clearer at day one. Because you ask a question and say 'Are we going to do that?' and they say 'No' and then a long way down the line they say 'Well actually yeah we're going to do that now', by which time you're so far down the project that to actually go back and start again you haven't got time. Whereas if you'd have know that early days it's a different product. So we ended up with a product there that was not the right thing, quite frustrating really because I was involved in the early development of that scheme and all the changes that happened later on, 'I asked you at the very start do you want this and you said no'.	
AF	Like the continual changing of scope is quite irritating again it's because, presumably, towards a solution agreement so getting tied up in the end was mainly...	
I	Yes because we would always carry on and you know even if we said you know we shouldn't be doing this we'd always carry on and follow the last instructions sort of thing.	
AF	Yeah. And do you think some of this, I mean you mentioned earlier about co-location and so I'm going to ask you a very straightforward question then, do you think the environment plays a part in the success of the Alliance, so what are your views on co-locating?	

Speaker	Transcription	Comments
I	I think it does. There are substantial advantages in being co-located I mean a good example is the fact that I can go and sit down with them, and if I'm doing an assurance role I can go and sit down with the guys in the Civil's team and we can actually talk things through and that can be a ten minute conversation, you know. But the fact that you're both there looking at the same drawing, scribbling on it with a pen you know, it can save you an absolute mountain of time doing things like that and if you're not co-located that can become a... but then again if you're not co-located particularly if you're doing an assurance role you tend to be a bit more independent and it's been a bit of a strange role for us really because I mean ABB have banged on about it since April, it is a client function but it was delegated down to the Alliance this, the Alliance had got Atkins people assuring work that Atkins people had done, particularly in the IP2 phase. They had to then be in a position to sort of demonstrate that you had done it you know.	
AF	And as part this sort of co-located versus non co-located argument do you feel that boys that are co-located are they committed to their parent organisation are they committed more to the Alliance?	
I	You mean do they go native?	
AF	Yeah, in blunt terms yeah do they go native?	
I	I think to a certain extent you do yes. You sometimes have to kind of think from an Alliance point of view rather than from an Atkins point of view so I think there is some of that. And I think that is, to some extent not avoidable.	
AF	Yeah I think it's unavoidable in co-locations but I'm sort of seeing a little bit of that in the non co-located staff as well, do you think that's a fair observation or would you say that that's...?	
I	Well I think they've all been on the culture change workshops that we went on as well in the early days, and I think they all, everybody within Atkins whose worked on this scheme with one or two minor exceptions, have all been quite happy to work most of the time, and as I say we've got some brick bats from time to time, but I think most of the time they've been quite happy to come and join in and try and work for the Alliance. I mean we've all, we've all tried to muck in with a few exceptions.	
AF	And what about people who only work sort of part time in a role in the Alliance, do you think that works or not?	
I	Well I was only really part time here for probably the first couple of years, probably till we moved here because I was still doing other stuff like for my, what was it my parent part of the and also part of grid work outside the Alliance. But I think yes you can do it I mean I'm doing it now in effect.	

Speaker	Transcription	Comments
AF	Do you not feel that that, does that sort of disengage you from the Alliance? Or does that disengage you from your parent company? Or do you feel like you're in a grey area between the two operations?	
I	What there is, if you're not working on Alliance full time you then get the issues of what do you priority to so that probably drops you into that grey area, it does a bit of... you're trying to do the best you can for the Alliance and the best you can for clients or on other Mid Wales Alliance issue and that sort of thing.	
AF	And again because you obviously spend a lot of time co-locating so you're probably the best person to ask that but do you feel that you demonstrate more loyalty to National Grid than the other Alliance partners than perhaps that you could have referred on mainly down to the fact that you understand the challenges that these people face?	
I	Yes I think I probably do. Having been here for the last, what is it, six year.	
AF	Yeah.	
I	I've been here for the last four in here. I mean I think you build up... being co-located as well you build up relationships purely because you know you'll stand and talk in the.. while you're making a cup of tea and things like that and I think that helps to build up relationships as well. And I think a lot of it is down to relationships.	
AF	So do you sort of think our employees are non co-located do you think they feel disconnected from the Alliance?	
I	I would think they probably still feel connected to a certain extent but obviously remote.	
AF	They're remote yeah? and just want to come back a little bit to the style of leadership now. So do you think that the style of leadership has an outcome on the success for the Alliance?	
I	Yes. You need a style of leadership that is inclusive for all the partners. Now we've had a National Grid person leading the Alliance throughout the vice managers always been a National Grid person which I think has probably, probably helped to make the relationships a little more, find the right word, but yeah probably equitable in that they've got less of an axe to grind than the other people, the partners managers in that they're kind of prime motivation is going to be the success of the Alliance that they're on. And I think that's probably helped having a National Grid person I've noticed we've gone a lot more contractual since that's stopped.	
AF	Yeah definitely, it's a much more contractual world we live in these days.	
I	Oh yes I mean it was a much more get on and do it approach days knowing that we were going to get paid for what we did so everybody was quite happy to crack on and get things done, not worry so much about the paperwork.	

Speaker	Transcription	Comments
AF	So for you leadership is important then yeah? You put a great emphasis on that yeah?	
I	Yeah.	
AF	And it's slightly different type of approach here now but why do you think people go into Alliances, do you think they go into Alliances for the money, to accelerate their careers or for the training opportunities?	
I	That's a good one, I don't know. The point is if you look at quite a few people in this organisation, they've done quite well career wise out of coming to work here. I mean it's an interesting experience because you're working in a multi disciplinary organisation with people from other organisations, so from that point of view it is good experience I think to have, I've certainly enjoyed it it's been good working, as I say multi disciplinary with all the other businesses, because there's some awfully clever people upstairs as we have in Atkins particularly the t and c people it's...	
AF	Yeah I know, yeah, yeah.	
I	So I think it certainly has a good impact on your career. And I think probably from a job satisfaction point of view if you're up to that kind of stage and you're motivational level it can be good as well. But for other people they just, don't like it at all.	
AF	Do you think because they saw it blocking their career path do you think or was it just a lack of in terms of job satisfaction what was it...?	
I	I think it was just the way of working. They didn't like the Alliance way of working but I think perhaps they thought it was a bit too cosy that the organisations working together.	
AF	So you've not seen anybody whose come into the Alliance just purely because the project allowed them to come on the cash and that's why they stay here. Ie. A lot of people see the Alliance as cash cow I don't know.	
I	I'm not aware of that no.	
AF	You not aware of that?	
I	Not from a personal, you know a people point of view.	
AF	And in the same way in terms of training you've not seen anyone whose come in here and seeing it as a fantastic training opportunity.	
I	No and I mean we have had some fantastic training opportunities but I'm not aware that anyone's particularly come in for that reason.	
AF	It's fair to say though that a lot people look at it as a separate you know...	
I	Yeah, it's been quite good job security as well actually.	

Speaker	Transcription	Comments
AF	Job security. It's interesting one that because a lot of people don't realise that the job security is actually an over arching factor really, there's not many projects that can give you five, six, ten years worth of guaranteed work here but... as somebody who's been involved in recruitment or resources into the Alliance, do you feel it's better to recruit people directly into our business or do you believe it, what would you prefer to do in line...	
I	It's easier if we can get them in directly rather than... are you thinking there from our business rather than bringing them from other Atkins' businesses?	
AF	Yeah.	
I	In a way it's better if we can have them directly but bringing people in from other business does bring in different expertise and I mean one thing Atkins can do the other organisations, partners are not quite so good as at, we do have a lot of very good people within the big Atkins umbrella that we can bring in for specific trust tasks. And over the time we have actually demonstrated that because we've bought it, you know I've bought in architects and specialist heating and ventilation people and so on, deal with specific problems and I'm not sure the other organisations ever really appreciated just how much.	
AF	OK. So talking about, we mentioned earlier about working part time on the Alliance or people coming out of the Alliance and going back to their parent organisation so, how do you view the integration of employees back into their parent organisation?	
I	I think it's got some challenges because when you're working in an Alliance for a long period of time it's quite cosy and you know you don't have to worry about where then next piece of works coming from, the Alliance kind of... the work starts to dry up then you've got to be a lot of people I don't think have ever been involved, within the Alliance, we've just had it effectively spoon fed to us. Whereas now we're having to go out and start looking at... and I think people are finding that quite hard.	
AF	So, do you think that it's not only the people that find that hard but also the managers as they expect well you've just come back and they'll drop back into the core values and the way that Atkins operates and obviously there's two dis-cultures that are operating here isn't there?	
I	There is yeah. I think the management do expect people to just drop in, it's a bit of a culture shock.	
AF	We're right at the end now Mike just a couple more questions for you, both a bit contentious so if you don't want to answer them feel free to decline...	
I	You've not know me not take on the contentious issues before have you?	
AF	I'm sure this one you're going to take on though. Issues around off shoring really and you know it's all the vogue at the moment and for if using an off shore in can work in Alliance really?	

Speaker	Transcription	Comments
I	If you can develop, it's two things really, it's relationships if you can get the right relationships developed with the people who are off shore and the second thing is that is the type of work that you... I think we've been quite successful on the civil side in actually sending stuff out but... particularly when Richard Whitehead was here and he was possibly having an over of work and again with the assurance side I think we've managed to do some of that, not as successful as perhaps what we'd hoped. What is an issue is for example as the one that came up last week is where you want to kind of sit down with say a CAD contractor, that CAD thing again, if you want to sit down with a kind of CAD technician and actually sit there with him and kind of do changes interactively sometimes it is very difficult to do that with somebody whose very remote, you need to actually sit down with that person and do it otherwise it becomes a real pain in the arse, so it's a little bit horses for courses, I think there is definite advantages in off shoring. The big issue with off shoring is I think people feel threatened by it because they think 'Well that's my job going off shore'.	
AF	Well I can see that as well, do you think that our client or our client and our partners also have that view of PLC.	
I	I don't think ABB do because they do exactly the same thing. Morgan Sindle I think possibly do. They don't, I don't think they do that themselves. I mean the opportunities in doing it are terrific I mean you make huge cost savings by doing that. I think had we have had the design element then Bangalore could have been... but we didn't have that in the early days so. But I think it's, as I say, it's two things, it's having the right type of work to send to them and also having the relationships with the people out there and I think the fact we had them over here in the Alliance has been a real bonus, I mean the fact that we know Mahesh we know Hashish, they've not been quite so much in the Alliance but it means that when we talk to them you know, we know who we're talking to, we know what their capabilities are, we know how much level of explanation we need to give them... people like Hashish very little because actually his understanding is really good. Mahesh a bit more.	
AF	Yes OK so it's building those relationships and the... is it just becomes a co-located issue really rather than an offshore issue where they take their time to get to that level.	
I	It's the long corridor thing isn't it, you know we do with Atkins anyway we send stuff to different locations.	

Speaker	Transcription	Comments
AF	Atkins does yeah. Right the final question I wanted to ask you was around employee engagement. Now I see there being a gap between how we do employee engagement. Do you feel that in your six years in the Alliance that engagement ie the way in which the Alliance addresses employees...	
I	Certainly early days it was pretty poor, there wasn't, particularly once we hadn't got somebody within the management team there wasn't very much engagement with Atkins staff in the Alliance at all. That improved over probably the last two years or so, and we've had much more, we've recently... but I don't think we're quite there yet.	
AF	No, where do you think it could improve? Where do you think it's lacking?	
I	I still think we need to see a bit more of the management here for people to think perhaps for them to come and give the team talk, I think that's hopefully going to... I'm not quite sure how we're going to deal with them in this because we've got Leeds and Epson in there, it's a very small number of us in the Midlands so, but Dave Parkin did come and I had my one to one with Dave Parkin because there was only me there.	
AF	Yeah I remember that yeah. OK good. Well that concludes that Mike, is there anything else you want to add around some of the Alliances and anything we spoke about today where you think it could be beneficial for me to .... while is there anything there that you want to flag up that you think can help?	
I	I'd love to kind of know how the other Alliances work compared to this one as to whether this model that we've got here is the right model. Because some of them have actually set up joint venture companies haven't they I think some of the other Alliances, and whether that works better or not, and whether ours is in fact... this loose model is the right model or not, where there are benefits in the other one. No I'm struggling on anything else mate.	
AF	Super well that's great, I'll bring the interview to an end, thank you very much.	
I	No problem, no problem.	

APPENDIX D.   Coding Glossary

Acronym	Description
ABD	Abduction
ACT	Action Research
BEHAV	Behaviours
CASE	Case Study
CHG	Change
COMPA	Competitive Advantage
CODE	Coding Types
CONF	Conflict
CONTR	Contract Types
DED	Deduction
DEFN	Definition
EPIST	Epistemology
ETH	Ethnography
EXCH	Exchange
GROU	Grounded Theory
IND	Induction
INTER	Interpretivism
INTRO	Introduction
KNOW	Knowledge
LEAD	Leadership
LEARN	Learning
METH	Methodology
ONT	Ontology
ORG	Organisations
PEOPLE	People
PHIL	Philosophy
POS	Positivism
POWER	Power
PRAG	Pragmatism
QUAL	Qualitative
QUANT	Quantitative
R CAUSE	Root Cause
REAL	Realism
RELA	Relationships
SUCC	Success
SOCON	Social Construction
TEAM	Team
T WORK	Team Work
THEO	Theories
TRIA	Triangulation
TRUST	Trust

APPENDIX E. **Ethical Approval**

	STAFFORDSHIRE UNIVERSITY **FAST-TRACK ETHICAL APPROVAL FORM (STUDENTS)** **Business School**			

Tick one box: ⊟ T̶A̶U̶G̶H̶T̶ ̶P̶O̶S̶T̶G̶R̶A̶D̶U̶A̶T̶E̶ ̶p̶r̶o̶j̶e̶c̶t̶ ⊟ U̶N̶D̶E̶R̶G̶R̶A̶D̶U̶A̶T̶E̶ ̶p̶r̶o̶j̶e̶c̶t̶ ⊟ P̶h̶D̶/̶M̶P̶h̶i̶l̶ ̶p̶r̶o̶j̶e̶c̶t̶⊟ T̶A̶U̶G̶H̶T̶ ̶P̶O̶S̶T̶G̶R̶A̶D̶U̶A̶T̶E̶ ̶M̶O̶D̶U̶L̶E̶ ̶a̶s̶s̶i̶g̶n̶m̶e̶n̶t̶

⊟ T̶A̶U̶G̶H̶T̶ ̶U̶N̶D̶E̶R̶G̶R̶A̶D̶U̶A̶T̶E̶ ̶M̶O̶D̶U̶L̶E̶ ̶a̶s̶s̶i̶g̶n̶m̶e̶n̶t̶

☐ Other project (Please state Professional Doctoral Project)

Title of Course on which enrolled: Doctorate of Business Administration (DBA)

Tick one box: F̶u̶l̶l̶-̶T̶i̶m̶e̶ ̶S̶t̶u̶d̶y̶ ̶⊟ ̶o̶r Part-TimeStudy ☐

Title of project: How can organisations operating in an engineering alliance optimise employee engagement so that best for project success outcomes are achieved?

Name of student researcher: Alexander Finlayson (96750283)

Name of supervisor/module tutor: Dr David Douglas

Student Researchers- please note that certain professional organisations have ethical guidelines that you may need to consult when completing this form.

Supervisors/Module Tutors - please seek guidance from the Chair of your Faculty Ethics Committee if you are uncertain about any ethical issue arising from this application.

		YES	NO	N/A
1	Will you describe the main procedures to participants in advance, so that they are informed about what to expect?	✓		
2	Will you tell participants that their participation is voluntary?	✓		
3	Will you obtain written consent for participation?	✓		
4	If the research is observational, will you ask participants for their consent to being observed?			✓
5	Will you tell participants that they may withdraw from the research at any time and for any reason?	✓		
6	With questionnaires and interviews will you give participants the option of omitting questions they do not want to answer?	✓		
7	Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	✓		
8	Will you give participants the opportunity to be debriefed i.e. to find out more about the study and its results?	✓		

If you have ticked **No** to any of Q1-8 you should complete the full Ethics Approval Form.

		YES	NO	N/A
9	Will your project deliberately mislead participants in any way?		✓	
10	Is there any realistic risk of any participants experiencing either physical or psychological distress or discomfort?		✓	
11	Is the nature of the research such that contentious or sensitive issues might be involved?		✓	

If you have ticked **Yes** to 9, 10 or 11 you should complete the full Ethics Approval Form. In relation to question 10 this should include details of what you will tell participants to do if they should experience any problems (e.g. who they can contact for help). You may also need to consider risk assessment issues.

			YES	NO	N/A
12	Does your project involve work with animals?			✓	
13	Do participants fall into any of the following special groups? **Note that you may also need toobtain satisfactory CRB clearance (or equivalent for overseas students)**	Children (under 18 years of age)		✓ None of These Apply	
		People with communication or learning difficulties			
		Patients			
		People in custody			
		People who could be regarded as vulnerable			
		People engaged in illegal activities (e.g. drug taking)			
14	Does the project involve external funding or external collaboration where the funding body or external collaborative partner requires the University to provide evidence that the project had been subject to ethical scrutiny?			✓	

If you have ticked **Yes** to 12, 13 or 14 you should complete the full Ethics Approval Form. There is an obligation on student and supervisor to bring to the attention of the Faculty Ethics Committee any issues with ethical implications not clearly covered by the above checklist.

If you have ticked **Yes** to 13 and your participants are **patients** you must follow the Guidelines for Ethical Approval of NHS Projects.

STUDENT RESEARCHER

Provide in the boxes below (plus any other appended details) information required in support of your application. THEN SIGN THE FORM.

Please Tick Boxes

I consider that this project has no significant ethical implications requiring a full ethics submission to the Faculty Ethics Committee.	✓
This ethics form is submitted in conjunction with the RDC 01 form and application to transfer to DBA. All supporting information pertaining to this research can be found in the plan of work.	
I also confirm that: ii) All key documents e.g. consent form, information sheet, questionnaire/interview are appended to this application.	
Or ii) Any key documents e.g. consent form, information sheet, questionnaire/interview schedules which need to be finalised following initial investigations will be submitted for approval by the project Supervisor/module leader before they are used in primary data collection. I	✓ January 2014

Signed: ~~~ Print Name: Alexander Finlayson   Date: 8th July 2013
(Student Researcher)

Please note that any variation to that contained within this document that in any way affects ethical issues of the stated research requires the appending of new ethical details. New ethical consent may need to be sought.

The completed form (and any attachments) should be submitted for consideration by your Supervisor/Module Tutor

SUPERVISOR/MODULE TUTOR
PLEASE CONFIRM THE FOLLOWING:

Please Tick Box

I consider that this project has no significant ethical implications requiring a full ethics submission to the Faculty Ethics Committee	
i) I have checked and approved the key documents required for this proposal (e.g. consent form, information sheet, questionnaire, interview schedule)	
Or ii) I have checked and approved draft documents required for this proposal which provide a basis for the preliminary investigations which will inform the main research study. I have informed the student researcher that finalised and additional documents (e.g. consent form, information sheet, questionnaire, interview schedule) must be submitted for approval by me before they are used for primary data collection.	

SUPERVISOR AND SECOND ACADEMIC SIGNATORY

STATEMENT OF ETHICAL APPROVAL (please delete as appropriate)

1) THIS PROJECT HAS BEEN CONSIDERED USING AGREED UNIVERSITY PROCEDURES AND IS NOW APPROVED

2) THIS PROJECT HAS BEEN APPROVED IN PRINCIPLE AS INVOLVING NO SIGNIFICANT ETHICAL IMPLICATIONS, BUT FINAL APPROVAL FOR DATA COLLECTION IS SUBJECT TO THE SUBMISSION OF KEY DOCUMENTS FOR APPROVAL BY SUPERVISOR (see Appendix A)

Signed… … … … … … … …Print Name Dr David Douglas   Date… … … …
(Supervisor/Module Tutor)

Signed… … … … … … … … Print Name Dr Stephen Malone   Date… … … …
(Second Academic Signatory)

APPENDIX A
AUTHORISATION FOR USE OF KEY DOCUMENTS

Completion of Appendix A is required when for good reasons key documents are not available when a fast track application is approved by the supervisor/module leader and second academic signatory.

I have now checked and approved all the key documents associated with this proposal e.g. consent form, information sheet, questionnaire, interview schedule

Signed… … … … … … … … … … … Print Name… … … … … … … … … … … … …
Date… … … …
(Supervisor/Module Tutor)

APPENDIX F.   Determining the Sample Size

Confidence Level

The confidence level is the level of risk that the researcher is willing to accept that the sample is within the average of the bell curve. Within social science, the confidence level is usually set at 95% certain (Watson 2001) and the corresponding z value is given as 1.96, as shown in A1. This value was used in all three methods to determine the sample size.

Table A1: Defining the variables in the confidence level

Level of Confidence	Z value
90% certain	1.65
95% certain	1.96
99% certain	2.57

Watson's Method

Watson's method is shown in equation1 below.

$$n = \left(\frac{\dfrac{P[1-P]}{\dfrac{A^2}{Z^2} + \dfrac{P'[1-P']}{N}}}{R} \right) \quad \textbf{Equation1}$$

Whereby the variables are defined in table A2 below.

Table A2: Defining the variables in Watson's method

Variable Identifier	Variable Description	Value	Unit
n	Sample size required	-	People
N	Number of people in the population	250	People
P	Variability	0.5	%age expressed in decimal format
A	Desired precision	0.05	%age expressed in decimal format
Z	Confidence level	1.96	See table 1
R	Response rate	1	%age expressed in decimal format

Substituting the values of table A2 into equation1 gives rise to;

$$n = \left(\frac{\frac{0.5[1 \quad 0.5]}{1.96^2} + \frac{0.5[1 - 0.5]}{250}}{1} \right) = 152$$

Israel's Method

Israel's method is shown in equation2 below.

$$n = \frac{Z^2 pq}{e^2} \quad \textbf{Equation2}$$

Whereby the variables are defined in table A3 below.

Table A3: Defining the variables in Israel's method

Variable Identifier	Variable Description	Value	Unit
n	Sample size required	-	People
e	Desired precision	0.05	%age expressed in decimal format
p	Variability belonging to the category	0.5	%age expressed in decimal format
q	Variability not belonging to the category	0.5	%age expressed in decimal format
Z	Confidence level	1.96	See table 1

Substituting the values of table A3 into equation2 gives rise to;

$$n = \frac{1.96^2 \times 0.5 \times 0.5}{0.05^2} = 385$$

However an adjustment for a small population should be made using equation 3.

$$n' = \frac{n}{1 + \left(\frac{n}{N} \right)} \quad \textbf{Equation 3}$$

Where N is the total population under consideration, i.e. 250. Substituting the new known values into equation 3 gives rise to;

$$n' = \frac{385}{1 + \left(\frac{385}{250} \right)} = 152$$

Saunders et al Method
Saunders method is shown in equation 4 overleaf;

$$n = pq\left[\frac{z}{e}\right]^2 \qquad \textbf{Equation 4}$$

Whereby the variables are defined in table A4 overleaf.

Table A4: Defining the variables in Saunders' method

Variable Identifier	Variable Description	Value	Unit
n	Sample size required	-	People
e	Desired precision	0.05	%age expressed in decimal format
p	Variability belonging to the category	0.5	%age expressed in decimal format
q	Variability not belonging to the category	0.5	%age expressed in decimal format
z	Confidence level	1.96	See table 1

Substituting the values of table A4 into equation 4 gives rise to;

$$n = 0.5 \times 0.5 \left[\frac{1.96}{0.05}\right]^2 = 385$$

However an adjustment for a small population should be made using equation 5.

$$n' = \frac{n}{1 + \left(\frac{n}{N}\right)} \qquad \textbf{Equation 5}$$

Where N is the total population under consideration, i.e. 250. Substituting the new known values into equation 5 gives rise to;

$$n' = \frac{385}{1 + \left(\frac{385}{250}\right)} = 152$$

Recalculating the Error

Based on response rate of 50%, we can calculate the error using equation 6.

$$e = \frac{z\sqrt{pq}}{\sqrt{n}} \qquad \textbf{Equation 6}$$

Substituting know values into equation 6 will give rise to;

$$e = \frac{1.96\sqrt{0.5 \times 0.5}}{\sqrt{125}} = 8.8\%$$

APPENDIX G.   Published Conference Proceedings

Achieving best for project success outcomes through optimal employee engagement – a proposal for organisations operating engineering alliances

Abstract

Employee engagement has continued to develop as an area of both academic and business interest but there remains paucity in literature that links employee engagement to engineering alliances and concomitant achievement of project success. This research examines current theoretical concepts and praxis contributions of institutions that represent industry. This research is contextualised within the engineering sector and does not specifically address other sectors such as, for example, healthcare, and public sectors. The research outlines key components of an employee engagement model within an engineering alliance. The research has novelty in that, to our knowledge, it is original in defining employee engagement in an engineering alliance. It addresses the knowledge gap in this area and contributes to academic discourse pertaining to employee engagement as a developing approach to managing projects.

Key words: Employee engagement, strategic alliances, project success, optimisation

Introduction

This research investigates theory and praxis applied to engineering alliances and employee engagement pertaining to best for project success outcomes. It is contextualised within the engineering sector to narrow the breadth of what constitutes an alliance and to provide focus on solving the problem pertaining to the perception that alliances have a success rate of 9% (Steinhilber, 2008). According to Taylor (2005) alliances are a much studied phenomenon and have been within engineering sectors for more than 20 years (Morwood et al, 2008, Kanter, 2002). Yet best for project success outcomes of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994) continue to receive mixed results (Taylor, 2005), resulting in organisations not always achieving their stated goals (Kale and Singh, 2009; Finlayson, 2011) of profit and turnover (Judge and Dooley, 2006). Emerging theory states that organisations are entering into alliances as part of a centralised competitive growth strategy (Gulati et al, 2008; Kale and Singh, 2009) with number of alliances growing at more than 15% annually (Steinhilber, 2008) in terms of organisations choosing to deliver projects in this way. Organisations are choosing to engage in alliances to achieve superior project success (Taylor, 2005) such as meeting strategic objectives regarding profit and turnover (Judge and Dooley, 2006) through aligned goals (Jones et al, 2003; Walker and Johannes, 2003) – however but they are not always proven to be successful. With failure rates of upto 70% (Taylor , 2005) and only 9% considered to be a success (Steinhilber, 2008), engineering sector continues to persist with

alliances calling themselves groups of companies that link together for a common purpose (Casseres-Gomes, 1994).

This engagement is lacking a systematic understanding of what notions of best for project success outcomes for alliances are (Taylor, 2005); be they 'trust, interdependence, co-ordination and communication' (Mohr and Spekeman, 1994) or 'profit and turnover' (Judge and Dooley, 2006). This lack of systematic understanding is not surprising as alliances are a complex construct, comprising of two or more organisations who are working together to create competitive opportunities to achieve a common business objective (Albani and Dietz, 2009; Bignoux, 2006; Cimon, 2004; Connell and Voola, 2007; Huggins, 2010; Judge and Dooley, 2006; Mandal et al, 2003; Parkhe, 1993; Teng and Das, 2008) of profit and turnover (Judge and Dooley, 2006) within a high pressured environment (Morwood et al, 2008). Achieving this common objective of profit and turnover (Judge and Dooley, 2006) can result in ambiguity relating to best for project outcomes of 'trust, interdependence, co-ordination and communication' (Mohr and Spekeman, 1994) through a desire to maximise profit and turnover. Yet it can be argued that there is no ambiguity because if best for project success outcomes of 'trust, interdependence, co-ordination and communication' are achieved then profit and turnover will be achieved. To add to this complexity, it needs to be noted that some emergent research cites problems with measurement of best for project success outcomes and success they can deliver (Cravens et al, 2000).

It is possible that best for project success outcomes achievement can be measured through employee engagement (Gennard and Judge, 2010; Macleod and Clarke, 2009). It has been suggested that employee engagement predicts employee outcomes, organisational success and financial performance (Saks, 2006), which can be used to define superior project success that Taylor (2005) refers to. Whilst current theory offers a number of definitions for employee engagement (Macleod and Clarke, 2009) it is possible to suggest a common themed definition that employee engagement is concerned with unlocking of people's potential at work (Macleod and Clarke, 2009) by measuring an employee's positive or negative emotional attachment to their job, their colleagues and their organisation (Vaijayanthi, et al, 2011; Mirvis, 2012).

There is a knowledge gap in both theoretical and practical nature that forms the focus of this research. The concept of employee engagement is considered within a collaborative environment such as an engineering alliance and is underpinned by theoretical contributions of extant theory. It is the examination and subsequent weaving of theory, focusing predominantly on grassroots practice and underpinning theoretical concepts, that contributes to originality of this research and the development of an outline employee engagement model.

Defining an Engineering Alliance

What is an alliance?

With the term alliance being variously described (Baker et al, 2011), it is important to establish the term to progress this research. An alliance can be defined as a voluntary arrangement between two or more organisations involving sharing of human-resources (Chung et al, 2006; Johnston and Staughton, 2009; Luo and Deng, 2009) to create competitive opportunities to achieve a common business objective (Albani and Dietz, 2009; Bignoux, 2006; Cimon, 2004; Connell and Voola, 2007; Huggins, 2010; Judge and Dooley, 2006; Mandal et al, 2003; Parkhe,

1993; Teng and Das, 2008). These voluntary informal arrangements are termed as 'alliance-relationships' which will include collaborative relationships, partnerships and joint-ventures (Taylor, 2005).

Collaborative relationships are defined as two or more organisations working together to achieve something they could not achieve on their own, by operating as a form of inter-organisational co-operation (Baker et al, 2011; Solesvik and Encheva, 2010) and because few, if any, individual organisations no longer have depth and breadth of capabilities to compete on their own (BSI, 2010). This inter-organisation cooperation requires a degree of trust between organisations at the outset (Taylor, 2005) without need for a contract (Morwood et al, 2008). Where voluntary arrangement is required to be formalised because risks associated with projects need to be formally owned, a contract is required, changing the definition of an alliance from a collaborative relationship to a partnership (Morwood et al, 2008). A partnership involves both parties working closely together in an environment of trust and openness, which places less of a focus on legal status of partnerships, instead focussing on desired behaviours of organisations (Morwood et al, 2008). Moreover, a joint-venture involves two or more organisations contributing human-resources to formation of a new separate subsidiary jointly owned by organisations (Morwood et al, 2008; Teng and Das, 2008).

Theoretical Concepts Applying to Engineering Alliances?
An engineering alliance is a human centred construct (Pansiri, 2005) with established convergence across a number of theories. Given this human centred construct, it is possible to begin identifying the relevant theoretical concepts that apply to engineering alliances. Resource-based view is a theoretical perspective that postulates prediction and explanation of how engineering alliances can achieve a sustainable competitive advantage through acquisition and control of human-resources (Rungtusanatham et al, 2003), such that they are controlled to achieve efficiency and effectiveness of best for project success outcomes (Andersen, 2010; Miller and Ross, 2003; Clardy, 2008). Resource-based view may infer a unitarist approach to understanding human-resources within engineering alliances. This assumption is based upon the idea that all employees are working together for the good (Audi, 2007) of alliance in achieving best for project success outcomes. However, resource-based view can also be considered as a pluralist approach, with acknowledgment that various groups of employees have different requirements and demands, especially where given such terms as 'acquisition and control of human-resources' (Rungtusanatham et al, 2003) and 'controlled to achieve efficiency and effectiveness' (Andersen, 2010; Miller and Ross, 2003; Clardy, 2008).

Whilst engineering alliances bridge a gap in knowledge and capacity between current human-resources and expected future requirements (Hoffmann, 2001), resource-based view also supports acquiring human-resources that cannot be hired from labour markets in a short period of time (Pitelis and Pseiridis, 1999). This suggests justification of engineering alliance's existence and sharing of human-resources (Chung, Luo and Wagner, 2006; Johnston and Staughton, 2009; Luo and Deng, 2009). However, these resources will have their own costs to be borne to secure human-resources commitment to engineering alliances. This cost can be related to transaction cost theory, a theoretical perspective that postulates a mandatory exchange of human-resources governed by a contract that occurs on open market (Rahman and Korn, 2010; Bignoux, 2006).

An engineering alliance will seek to minimise these costs (Hoffmann, 2001) through inter-organisation co-operation (Baker et al, 2011; Solesvik and Encheva, 2010) through relationships

of trust (Chiaburu et al, 2011); trust is considered an alliance behavioural antecedent (Mohr and Spekeman, 1994). Transaction cost theory is a pluralist approach, focusing on a mandatory exchange of resources to deliver best for project success outcomes.

Best for Project Success Outcomes for Engineering Alliances?
Best for project success outcomes through alliancing are perceived to be difficult to establish because of alliance complexity (Chan and Harget, 1993) and its construct as a business model (Morwood et al, 2008); complexity and form of an alliance refers to blending of employees from two or more cultures (Rahman and Korn, 2010) that forms a common project team. Whilst it can be argued that organisations enter into voluntary arrangements (Chung et al, 2006; Johnston and Staughton, 2009; Luo and Deng, 2009) to create competitive opportunities to achieve a common business objective (Albani and Dietz, 2009; Bignoux, 2006; Cimon, 2004; Connell and Voola, 2007; Huggins, 2010; Judge and Dooley, 2006; Mandal et al, 2003; Parkhe, 1993; Teng and Das, 2008), the risk of cooperating with each other is overshadowed by diverging and incompatible goals (Chan and Harget, 1993).

Cooperating with each other is underpinned by transaction cost theory, whereby mandatory exchange of skills and knowledge is through employees. Cooperation is further underpinned by need for trust and that each alliance participant organisation is working towards common business objective. According to Sendjaya and Peketri (2010), trust is a fundamental factor for cooperation within organizations and in everyday interactions between employees. Cooperation is driven by need to communicate honestly and to share knowledge. It can be argued that sharing knowledge reduces competitive advantage of employee or organisation but it's trade off should be increased competitive advantage through efficiency (Solesvik and Encheva, 2010) by working together across boundaries (Weiss and Hughes, 2005). Given this, we can argue that trust is a psychological state that compromises intention to accept vulnerability, which is based upon positive expectations surrounding intentions and behaviours of other employees (Solesvik and Encheva, 2010) or partner organisations. However, overshadow of diverging and incompatible goals caused by potential competitive advantage that organisations can achieve individually rather than collectively (Vanpoucke and Vereecke, 2010), suggests that trust is not always on agenda regarding best for project success outcomes, proffering notion of problems of poor communication, cooperation and trust (Chan et al, 2007). According to Lajara et al (2003), employee problems can decide the success or failure of an alliance and that a good human-resources management approach identifying skills and positions that are required for greatest impact on alliance's effectiveness. Muller (1999) describes human-resources management as a modern management technique, with values of human-resource management being unitarist in nature. Muller (1999) suggests actions of management within alliances are legitimate and rational and that employees who conflict with actions of management are bi-polar opposite (Aborisade, 2008).

Alliances are a complex business model (Morwood et al, 2008) between two or more organisations that involves sharing of human-resources (Chung et al, 2006; Johnston and Staughton, 2009; Luo and Deng, 2009) and it is plausible to suggest that unitary theory and alliances may not be wholly compatible. This assumption is defined by blending of two or more cultures (Rahman and Korn, 2010) that form business models of alliances. Aborisade (2008) suggests that pluralism theory can be used within an engineering alliance, proffering that an

alliance is not a unitary organisation but a partnership between organisations. It is from a pluralist view and problems of poor communication, cooperation and trust (Chan et al, 2007) and thus best for project success outcomes may be summarised as constituting; trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994). However, there are noted problems with measurement of best for project success outcomes and successes they can deliver (Cravens et al, 2000), though arguably being possible to achieve through employee engagement (Macleod and Clarke, 2009).

Employee Engagement

Kumar et al (2011) undertook research that examined employee engagement from its historical roots and concluded that there is no single agreed definition other than it is a multi-faceted construct (Kahn, 1990). According to Kumar et al (2011), if there is no universal definition of employee engagement, then it cannot be managed, neither can it be measured to ascertain if improvements are needed or if it working as intended. Research by authors such as Kumar et al (2011), Sundaray (2011) and Kular et al (2008) suggests work of Kahn (1990) as seminal in this field. This influential work has been tested once by May et al (2004), which was underpinned by research of Lawler and Hall (1970). Kahn (1990) and Lawler and Hall (1970) focuses on psychology of employee with Khan (1990) identifying that that meaningfulness, availability and safety are significantly related to employee engagement. These conditions suggest a pluralist approach to employee engagement, recognising employees are individuals with differing needs and requirements, where as a unitarist approach would suggest that all employees would act same, which is not what Kahn (1990) proposed.

Employee engagement has become a widely used term (Saks, 2006) with practitioners such as Macleod and Clarke (2009), Gennard and Judge (2010) and Chartered Institute of Personnel Development (2012). There is a convergence of opinion that employee engagement is a commitment to organisation by its employees to go that extra mile, to look beyond job satisfaction and feel a sense of fairness and trust in doing so (CIPD, 2012; Gennard and Judge, 2010; MacLeod and Clarke, 2009; Clarke, 2012). This convergence describes a unitarist approach to employee engagement, proffering all employees working together for good of organisation (Audi, 2007). However, closer inspection suggests that it is a pluralist approach; with each employee's level of 'extra mile', they are prepared to go. Current thinking describes employee engagement as employees being psychologically present when occupying and performing a job role (Kahn, 1990) with outcome being job satisfaction, motivation and involvement (Lawler and Hall, 1970); whilst being delivered by energy, involvement and efficacy (Maslach and Leiter, 2008). Xu and Cooper-Thomas (2011) suggest that employee engagement is harnessing of employees to their jobs, physically, cognitively and emotionally. This definition is further underpinned by Sundaray (2011), who suggests that employee engagement is level of commitment and involvement of an employee to its organisation. Moreover, research may also suggest a pluralist approach is generally adopted within praxis literature rather than unitarist approaches often put forward; praxis approaches are founded upon concepts whereby employee engagement is not a singular construct (Robertson, 2012)

Moreover, given seminal work of Kahn (1990) and confirmation of three psychological conditions, a pluralist approach will be adopted leading to a generalised definition of employee engagement as; level of commitment (CIPD, 2012; Gennard and Judge, 2010; Macleod and Clarke, 2009) and involvement of an employee to his/her organisation (Sundaray, 2011), with employees demonstrating a passion for work that incorporates their cognitive, emotional and

physical expressions (Kular et al, 2008) by means of 'meaningfulness, safety and availability' (Kahn, 1990). These definitions are based upon seminal works of Kahn (1990) and Lawler and Hall (1970) and weave praxis research of MacLeod and Clarke (2009), Gennard and Judge (2010) and CIPD (2012) with work of Sundaray (2011) and Kular et al (2008).

Employee Engagement Models and Theory

Models

Current theory suggests there has been little in way of development of models regarding employee engagement (Kumar et al, 2011; Kular et al, 2008; Saks, 2006). Paucity in development of models can be attributed to other constructs that employee engagement holds synergies with (Kumar et al, 2011). In particular, Kumar (2011) highlights that employee engagement can be viewed as both an individual and group phenomenon which will have an impact upon measurement of best for project success factors of 'trust, interdependence, co-ordination and communication' (Mohr and Spekeman, 1994).

Saks (2006) defines two strands of employee engagement models; positive and burnout. Table 1 depicts interpretation of work of Saks (2006) 'positive engagement and burnout'.

Table 1: Positive coupling of positive and negative engagement

Positive Engagement (Kahn, 1990)	Disengagement (Burnout) (Maslach and Leiter, 2008)
Meaningfulness	Workload
	Control
Availability	Rewards
	Recognition
Safety	Community
	Fairness

Table 1 depicts positive engagement through work of Kahn (1990), identifying three psychological conditions of meaningfulness, safety and availability. The model is built upon psychology of employees, suggesting that employees have a psychological meaning to be in work, (i.e. a purpose), leading to feeling psychologically safe in their work, (i.e. have job security) and therefore psychologically make themselves available for work (i.e. perform role). Antithesis to positive engagement is disengagement with Maslach and Leiter (2008) suggesting that disengagement is burnout. Saks (2006) describes burnout as erosion of positive engagement and in particular passion for work (Kular et al, 2008) will subside. This erosion is attributed to workload, control, rewards, recognition, community and fairness (Maslach and Leiter, 2008). Maslach and Leiter (2008) are suggesting that too much workload and employee's self-control will lead to erosion of meaningfulness, whilst unfair practice, demeaning values and a lack of community spirit will erode safety. Erosion leads to lack of reward and recognition leading to erosion of employee availability as they withdraw themselves from work (Khan, 1990).

Yet these attributes can be defined as components of positive engagement if they are managed correctly by positively coupling meaningfulness with control and workload, safety with fairness, values and community and availability with recognition and reward. This can be further underpinned by Xu and Cooper-Thomas (2011) who suggest that meaningfulness is influenced

by characteristics such as challenge and autonomy with safety influenced by employee interactions with one another and availability influenced by self-confidence, as shown in table 2.

Table 2: Incorporating leadership characteristics

Positive Engagement (Kahn, 1990)	Disengagement (Burnout) (Maslach et al, 2008)	Leadership Characteristics (Xu et al, 2011)
Meaningfulness	Workload Control	Challenge Autonomy
Availability	Rewards Recognition	Self Confidence
Safety	Community Fairness	Interactions

Theory suggests that it is possible to build an employee engagement model based upon conditions and positive coupling of Kahn (1990), Maslach and Leiter (2008) and Xu and Cooper-Thomas (2011) which can then be used to underpin praxis literature, as depicted in table 3.

Table 3: Defining employee engagement with praxis

Positive Engagement (Kahn, 1990)	Praxis View (Macleod and Clarke, 2009)	Engagement Style (Gennard and Judge, 2010)
Meaningfulness	Leadership Style	Affective Engagement
Availability	Employee Voice	Intellectual Engagement
Safety	Integrity	Social Engagement

According to table 3, MacLeod and Clarke (2009) proffer leadership as style by which employee engagement is delivered through engaging managers who treat their employees through empowerment and control. Gennard and Judge (2010) describe these traits as affective engagement that can measure emotional attachment to organisations. There is agreement through positive coupling of meaningfulness (Kahn, 1990) with control and workload (Maslach and Leiter, 2008) and challenge and autonomy (Xu and Cooper-Thomas, 2011).

Macleod and Clarke (2009) describe employee voice as a strong sense of listening to and responding to employees. Gennard and Judge (2010) describe this type of engagement as intellectual engagement that refers to the extent by which employees are absorbed in their work. There is positive correlation through positive coupling of availability (Khan, 1990) with recognition and reward (Maslach and Leiter, 2008) and self-confidence (Xu and Cooper-Thomas, 2011).

Finally, Macleod and Clarke (2009) describe integrity as behaviour throughout an organisation that is consistent with stated values of organisation. Gennard and Judge (2010) describe this as social engagement which defines extent which employees talk with one another and can be

measured by positive couplings of safety (Khan, 1990) with fairness and community (Maslach and Leiter, 2008) and interactions with one another (Xu and Cooper-Thomas, 2011).

Table 4 depicts positive couplings and summarises employee engagement through recent praxis literature.

Table 4: Summarising employee engagement

Positive Engagement (Kahn, 1990)	Disengagement (Burnout) (Maslach et al, 2008)	Leadership Characteristics (Xu et al, 2011)	Praxis View (Macleod et al, 2009)	Engagement Style (Gennard et al, 2010)
Meaningfulness	Workload Control	Challenge Autonomy	Leadership Style	Affective Engagement
Availability	Rewards Recognition	Self Confidence	Employee Voice	Intellectual Engagement
Safety	Community Fairness	Interactions	Integrity	Social Engagement

Table 4 depicts an employee engagement model can be built for an engineering alliance. However, this model needs to be underpinned by theoretical concepts. By underpinning theoretical concepts, it is possible to then explore how this model can be used to optimise employee engagement such that best for project success outcomes of 'trust, interdependence, co-ordination and communication' (Mohr and Spekeman, 1994) can be achieved. The model will need to be underpinned through employee engagement theoretical concepts to determine its robustness within engineering alliance context.

Employee Engagement Theory
Kahn's (1990) three psychological conditions of meaningfulness, safety and availability utilise a pluralist view, yet Gennard and Judge (2010) state there a number of theories that can underpin employee engagement, citing motivation theory and human capital theory. Motivation theory was developed by Mintzberg in 1959 and what motivates people to work (Basset-Jones and Lloyd, 2005). Human capital theory has close synergies with resource-based view and suggests that if an organisation invests in its employees (Gennard and Judge, 2010) then its employees will increase productivity and output (Hatch and Dyer, 2004), which in turn relates to best for project success outcomes of interdependence between leader and employees. Leader member exchange describes relationship quality between a leader and each of their followers (Schyns et al, 2012; Kang et al, 2011; Mahsud et al, 2010). This theory underpins leadership qualities described in positive coupling of meaningfulness (Kahn, 1990). Agency theory is used to where one party [principal] delegates authority to another party [agent] (Fayezi et al, 2012; Mitchell and Meacham, 2011) and addresses meaningfulness of employee in organisation (Kahn, 1990) as well as autonomy and challenge that employee can meaningfully have (Xu and Cooper-Thomas, 2011). This level of commitment is underpinned by motivation of returns they bring from others (Bignoux, 2006; Paille, 2009), suggesting that exchange is a human to human relationship based upon concept of trust (Bignoux, 2006; Lapierre, 1997).

Social exchange theory (Bignoux, 2006) plays an important role in employee engagement because it enables an explanation of why employees choose to engage organisations (Saks, 2006). These choices need to align with organisations best for project success outcomes, which

means agency theory, will also play an important role in employee engagement because it recognises organisational structure in recognising three psychological conditions associated with engagement; meaningfulness, safety and availability (Khan, 1990).

Discussion – Employee Engagement in an Engineering Alliance

Developing an employee engagement model in an engineering alliance

The basis for development of an employee engagement model starts with revisiting definitions of an engineering alliance, best for project success outcomes and employee engagement. The model is then developed through findings depicted in table 4. This section validates choices made regarding weaving of praxis and theory to build an employee engagement model for an engineering alliance but is anchored by three psychological conditions of meaningfulness, safety and availability (Kahn, 1990) and best for project success outcomes of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994).

Meaningfulness

Meaningfulness is the mechanism by which employees actively seek meaning through their work (Kular et al, 2008), seeking to feel a positive emotional attachment to engineering alliance through affective engagement (Gennard and Judge, 2010). Affective engagement encourages positive emotional attachment through challenge and autonomy (Xu and Cooper-Thomas, 2011). If positive emotional attachment is not achieved, employees are likely to leave the engineering alliance (Kular et al, 2008); reasons for leaving are given as a lack of control over workload and feeling undervalued (Maslach and Leiter, 2008). Meaningfulness represents an opportunity to measure levels of trust and interdependence between employees and leaders within an engineering alliance, focussing on leadership style. This suggests that meaningfulness is generated through a series of meaningful inter-actions between employee and their co-workers or between employee and their managers and is underpinned by social exchange theory and building of relationships over time (Saks, 2006) within engineering alliance. These relationships are built around trust (Bignoux, 2006; Lapierre, 1997) and given that an engineering alliance is a partnership between two or more organisations working closely together in an environment of trust and openness (Morwood et al, 2008), trust is defined as a multi layered concept that comprises a range of attributes such as dependability and credibility (Lamothe and Lamothe, 2011).

Meaningfulness can be optimised through strong leadership (Macleod and Clarke, 2009; Xu and Cooper-Thomas, 2011) within engineering alliances. Leadership is considered to be the practice by which employees are influenced to work together (Curtis and O'Connell, 2011) to achieve best for project success outcomes of 'trust, interdependence, co-ordination and communication' (Mohr and Spekeman, 1994) that leads to organisations achieving their stated goals (Kale and Singh, 2009; Finlayson, 2011). Leadership is underpinned by leader member exchange and perceived quality of relationships between leaders and employees in engineering alliances. Current research suggests congruence with four types of leadership; authentic, transactional and directive (Chiaburu et al, 2011) and transformational leadership (Curtis and O'Connell, 2011).

Transactional leaders use transaction cost economics as basis for leadership, choosing to focus on a financial reward, a training opportunity or a temporary increase in personal authority for

employees, with no focus on a long term or meaningful relationship (Chiaburu et al, 2011), which suggests little or no affective engagement through influence but does exhibit some autonomy through a temporary increase in personal authority. It could be argued that if financial reward or training opportunity is seen as affective engagement on a temporary basis then the leader is paying attention to employee performance (Curtis and O'Connell, 2011), which is a trait of transformational leadership.

However, authentic leaders use social exchange theory as bases for leadership, choosing to create meaningful and honest relationships (Chiaburu et al, 2011) creating an environment that stimulates and employees (George et al, 2007) through autonomy and challenge. Authentic leadership (aka participatory leadership) was prevalent in the 1970's (Nazari and Emami, 2012), which suggests that authentic leadership could be a reinvented management fashion (Saks, 2006) that encourages positive emotional attachment through challenge and autonomy (Xu and Cooper-Thomas, 2011).

Given the best for project success outcomes are 'trust, interdependence, co-ordination and communication' (Mohr and Spekeman, 1994), then authentic leadership can be viewed as the best leadership style that will achieve these. Research suggests that transformational leadership is the most successful leadership style but this has only been applied to singular organisational constructs within recent literature. The sharing of resources requires blending of two or more organisational cultures (Rahman and Korn, 2010; Herman et al, 2007), suggesting that an authentic leadership style will transcend cultural barriers through creation of meaningful and honest relationships. These meaningful and honest relationships are built upon trust between individuals over time (Saks, 2006) through empowerment of employees (Wellman, 2007) and are underpinned by interpersonal exchanges described by social exchange theory (Bignoux, 2006).

Meaningfulness is based around trust and authentic leadership but there are barriers to achieving this; leaders not being aware, leaders not knowing or leaders not believing in employee engagement (MacLeod and Clarke, 2009). These barriers support the resource-based view suggesting sustainable competitive advantage can be achieved through acquisition and control of human-resources (Rungtusanatham et al, 2003) such that they are controlled to achieve efficiency and effectiveness (Andersen, 2010; Miller and Ross, 2003; Clardy, 2008) of best for project outcomes regarding 'trust, interdependence, co-ordination and communication' (Mohr and Spekeman, 1994).

Meaningfulness can also be impacted upon by conflict; Langfred (2007) suggests that conflict is polar opposite of trust, being harmful to coordination and performance. Conflict can arise between employees in engineering alliances because of differences in cultures (Jones et al, 2003); with culture being defined as particular ways in which a participant organisation structures its business processes, which can influence upon best for project success outcomes of 'trust, interdependence, co-ordination and communication' (Mohr and Spekeman, 1994). Conflict between leaders and employees is based upon a leader's expectation that employees will cooperate willingly (Sanders and Schyns, 2006). This is a limited view of conflict, there are other reasons for conflict namely uncertainty, inconsistency behaviours, focus, risk, performance (Hawkins and Little, 2011a:2011b) which leads employees feeling a lack of workload control and undervalued (Maslach and Leiter, 2008).

Meaningfulness can be summarised as an authentic leadership style that is based upon trust and ability to blend two or more organisational cultures to form an engineering alliance. This formation of an engineering alliance is built upon affective engagement, which recognises employees are individuals, who will at times, be in conflict with one another. Authentic leaders seek to build a meaningful relationship between themselves and employees as well as between employees of differing organisational cultures.

Safety

Safety is the psychological condition (Kahn, 1990) that defines social engagement through which employees talk to (Gennard and Judge, 2010) and interact with one another (Xu and Cooper-Thomas, 2011). Safety is underpinned by fairness, values and community, if not managed correctly will lead to employee disengagement (Maslach and Leiter, 2008). These constructs are referred to as behavioural integrity, which is developed through trust and values (MacLeod and Clarke, 2009). Safety represents an opportunity to measure communication and coordination within an engineering alliance.

Social engagement relates to social communities (Adler and Kwon, 2002) whereby social community is an engineering alliance with shared human-resources (Chung et al, 2006; Johnston and Staughton, 2009; Luo and Deng, 2009), which holds close synergy with social exchange theory (Bignoux, 2006) in the sense that exchange is community spirit and values. Social community within an engineering alliance is broadly defined as a social network that contains a group of professionals who come together to exchange and build knowledge (Ropes, 2009) and this exchange of knowledge is considered to be organisations achieving their stated goals (Kale and Singh, 2009; Finlayson, 2011). Social capital can, with respect to engineering alliances, be viewed as friendship and moral support (Adler and Kwon, 2002) through a social structure (Coleman, 1988), which is underpinned by social exchange theory (Bignoux, 2006) but exchange is now described as structure by which employees interact and talk with one another (Gennard and Judge, 2010). This social structure can be a hierarchical relationship between employee and leader (Adler and Kwon, 2002). An authentic leadership style will seek to build relationship through shared understanding or meaning (Ropes, 2009) that is based on honesty and trust and working towards same goals, underpinning relationships through leader-member-exchange theory and quality of relationship. Similarly, employees will seek to build a social relationship between themselves (Adler and Kwon, 2002), choosing to transcend cultural barriers of different organisations through relationships based on favours (Adler and Kwon, 2002).

Social structure and best for project success outcomes of 'trust interdependence, co-ordination and communication' (Mohr and Spekeman, 1994) are all based upon trust (Mohr and Spekeman, 1994; Ropes, 2009). Trust in safety relates to faithfulness and whether actions of authentic leader will be followed up or whether fellow employees will return favour in future. Faithfulness requires a degree of fairness to be present within relationships. A lack of clarity in determining fairness can naturally lead to blame (Arino and Ring, 2010; Tan and Ching, 2012), resulting in conflict between employees that will see favours being withdrawn due to a lack of trust regarding fairness of exchange. If there is no perceived fairness in relationships between leaders and employees, then leader's expectation that employees will cooperate willingly (Sanders and Schyns, 2006) will be diminished by employee's perception that there is no ethical behaviour, in form of integrity, being demonstrated by the leader (Arino and Ring, 2010). Integrity is the basic form of principles and values (Davis and Rothstein, 2006) and is an alignment of employees and leader's words and deeds (Fritz et al 2013). In terms of safety, integrity is a psychological-

contract that refers to perceptions of an agreement between a leader and an employee (Davis and Rothstein, 2006) and it is underpinned by leader-member-exchange theory and values of social community. This agreement is built upon two constructs; trust and credibility (Davis and Rothstein, 2006) with trust construct relating to what has happened in past and what is likely to happen in future based upon (Fritz et al, 2013) reliability and credibility (Davis and Rothstein, 2006).

The credibility construct is based upon an assessment of relevant knowledge (Prottas, 2013). Integrity is therefore underpinned by leader member exchange and the quality of the relationship between the leader and employees as well as the values of the employees between one another within the social community. Integrity is also a trait of authentic leadership, in the sense that credibility can be viewed as a by-product of the creation of honest and meaningful relationships. This suggests that safety may be summarised as; having a high degree of honesty in the relationship that is built upon what has happened in the past and what will happen in the future.

An authentic leader will be seen to follow through words with actions and that will foster trust with the employees. Authentic leaders will create an environment of social engagement that is underpinned by social exchange theory. The exchange in this environment will not be an exchange of resources but an exchange of community spirit and knowledge with a desire to transcend cultural barriers for the good of the engineering alliance.

Availability

Availability is a psychological condition (Kahn, 1990) defining self-confidence of employees (Xu and Cooper-Thomas, 2011) such that they make themselves available for work through their absorption in their work (Gennard and Judge, 2010); this absorption in their work is underpinned by recognition and reward (Maslach and Leiter, 2008). These constructs are demonstrated through employee voice (MacLeod and Clarke, 2009) where views of employees are sought and listened to (MacLeod and Clarke, 2009). Availability presents an opportunity to measure trust and interdependence within an engineering alliance through; employee voice encouraging challenge (MacLeod and Clarke, 2009) regarding the performance of the employees and how things can be improved (Gennard and Judge, 2010). This type of engagement is called intellectual engagement (Gennard and Judge, 2010), with employees offering intellectual capital to the organisation (Cardoso, et al, 2010).

Intellectual capital is underpinned by human capital theory and has a number of definitions within recent literature (Koszewski, 2009). It is often referred to as knowledge capital and described as an intangible asset (Razzaq et al, 2013). Intellectual capital has two main constructs; human capital and relational capital (Razzaq, et al, 2013; Mládková, 2013). Human capital describes employees' level of knowledge and experience (Mládková, 2013); level of knowledge and experience can be demonstrated by employee through definitions of their work being complex (Cardoso et al, 2010) which can be used to demonstrate employees' absorption in their work (Gennard and Judge, 2010). Relational capital is internal relations between employees (Razzaq et al 2013; Mládková, 2013) within engineering alliances and as such demonstrates a sense of interdependence amongst alliance communities. Koszewski (2009) describes intellectual capital as a social collective within an organisation or intellectual community. However, in order for intellectual capital to be successfully shared, it must be both recognised and rewarded. Employee reward and recognition is viewed as a component of meaningful work (Brun and Dugas, 2008). A lack of recognition of employees' efforts can lead to emotional distress in organisation (Brun and Dugas, 2008) which in turn undermines extent by which employees make

themselves available for work (Gennard and Judge, 2010) through a diminished self-confidence (Xu and Cooper-Thomas, 2011). This lack of availability can lead to a de-motivated employee (Brun and Dugas, 2008) which suggests that motivation is a key component of availability. Motivation is seen as a management tool that promotes and encourages employees to increase their organisational effectiveness (Manzoor, 2012).

There are two levels of motivation; intrinsic and extrinsic (Salie and Schlechter, 2012). Intrinsic motivation is recognition element of motivation, generated by employees through pride, self-actualisation and a desire to grow (Salie and Schlechter, 2012). These characteristics are not too dissimilar to intellectual capital and desire to continually improve knowledge capital such that the organisation grows with individuals increase in knowledge capital. Extrinsic motivation is reward element of motivation, which can include pay, praise or promotion (Salie and Schlechter, 2012). In rewarding employees' efforts, it is viewed by employee as a reward for imparting intellectual capital to enable the company to achieve successful project outcomes. According to Danish (2010), reward and recognition leads to achievement of successful project outcomes but there is cognisance of employee motivation being key to success. Manzoor (2012) complements Danish (2010) view by noting a motivated employee will recognise project success outcomes and will understand what is needed to achieve them, which suggests positive interdependence between leader and employee.

Bishop (1986) argues that length of service and intellectual capital acquired, particularly intellectual capital concerned with the organisation itself, rather than job roles, is of significant importance. Bishop (1986) discusses rewards in line with long term contracts, which engineering alliances can typically offer. Bishop (1986) argues that in order to retain intellectual capital duration of alliance, a new contract needs to be drawn up to reflect reward and recognition based on milestones. There is further suggestion of a long term transactional relationship that is based around financial reward, which is an extrinsic form of motivation. It also suggests that intrinsic motivation is of less importance because need to grow is of less importance through self-motivation (Salie and Schlechter, 2012) and that meeting milestones becomes overriding objective as measure for performance (Bishop, 1986) through an expectation of recognition and reward as extrinsic motivation (Salie and Schlechter, 2012) and that of employee voice.

Employee voice is a recent concept that involves participation of employees in decision-making process of organisations (Marginson et al, 2010; McCabe and Lewin, 1992). It is a two-way communication process between management and employees (Marginson et al, 2010) and has been in the past referred to as participative management (McCabe and Lewin, 1992). There is much discourse surrounding employee voice and benefit that it can deliver to an organisation (Avery et al, 2012; McLean et al, 2013). Perceived lack of benefit relates to a lack of trust between employees and management (Morrison, 2011) with employees offering discretionary expression of comments (McLean et al, 2013). Discretion is reserved for fear of it not being safe to speak up (Detert, 2007) because management may choose to hear employee words as non-constructive (Avery et al, 2012). Non constructive words can relate to dissatisfaction with current status quo (Burris, 2012; McLean et al, 2013) of alliance or an opportunity for improving their own wellbeing (Detert, 2007) within the alliance.

Availability can be summarised by development of intellectual capital that can be freely exchanged within alliances. The extent by which employees will freely exchange knowledge is governed by reward and recognition that is administered by leadership. An authentic leader will

recognise reward and recognition is a cyclical event that can be built upon trust and right environment where employee's voices can be heard.

Organisational Commitment

Engineering alliances are not a singular construct, they consist of two or more organisations; it is from this perspective that a fourth element will need to be considered. This fourth element is not a psychological condition per se, but an understanding of organisational commitment. According to Scholl (1981) organisational commitment is a series of behaviours that identify with employees recognising goals and missions of the organisation and ability for employees to remain. Organisational commitment embodies three psychological conditions of Kahn (1990) and it can be argued that organisational commitment is a merging of three conditions; argument being underpinned by a systems thinking approach, assesses inter-relationships from human perspective (Jambekar, 1995). It can be linked to established theories (Ballé and Jones, 1995) to determine relationship of employee engagement within an engineering alliance, such that "best for project success outcomes" (Mohr and Spekeman, 1994) are determined. Systems-thinking adopts a logical thinking style (Ballé and Jones, 1995) that can be used to solve chronic problem (Jambekar, 1995) of relationships between an organisation and its employees' within an engineering alliance. This chronic problem relates to a cause and effect relationship that will change over a period of time (Jambekar, 1995: Ballé and Jones, 1995: Sheffield et al, 2012) within engineering alliancing.

An engineering alliance is a complex project, with interactions occurring at both organisational and personal levels, which can be represented as closed loop thinking, which recognises that cause and effect are not linear relationships. The non-linearity of the relationship represents the changing requirements of an employee or an individual over time. These changing requirements, with respect to employee engagement, may lead to the establishment of an accelerated career path, based on the idea that roles are project related and not organisational related; job security based upon the longevity of the alliance, which other contracts may not be able to offer; or they can be an enhanced salary based on the concept that alliances are a cash cow and that the participant organisation will pay an enhanced salary for employee's skills. The accelerated career path and job security are often perceived as acceptable outcomes for both the employee and participant organisation, with the employees aligning to participant organisations goals for project success with enhanced salary an additional outcome for the employee at the cost of the participant organisation.

Organisational commitment can be summarised as recognition employees understand goals and mission of alliances and each of its partners. It is an embodiment of three psychological conditions of safety, availability and meaningfulness that is underpinned though systems thinking. It is also recognition that career paths and learning are significant. However, success of organisational commitment is based upon inter-relationships and employee behaviours.

Conclusion

We advance the likelihood that to measure employee engagement in an engineering alliance will lead to ensuring that best for project success outcomes, as advanced by Mohr and Spekeman (1994), are achievable. This can be attained by weaving praxis and theory of employee engagement with Kahn's (1990) psychological conditions of meaningfulness, availability and safety and Scholl's (1981) organisational commitment. These components are underpinned by social exchange theory (Bignoux, 2006) and leader-member exchange theory (Schyns et al, 2012;

Kang et al, 2011; Mahsud et al, 2010) with systems thinking (Jambekar, 1995) bringing these four elements purposefully together.

This paper suggests that an authentic leadership style can bring together organisations that form an engineering alliance through a pluralist lens, recognising each employee is different and cannot be generalised into a one size fits all leadership style. Authentic leaders will seek to build a social community that encourages employees to transcend cultural barriers and exchange knowledge; ensuring fairness throughout the community, recognising and rewarding employees in a fair and unbiased way. Such leadership will focus on relationship quality with their employees and build relationships upon integrity and trust. However, employee engagement is not a singular construct that is easily managed and each time it is researched a different lens angle or new theory is in need of being applied to it. This research suggests a new lens be adopted regarding authentic leadership and its applicability within an engineering alliance. Authentic leadership is considered to be an effective style of leadership that encourages positive employee engagement (Hsiung, 2012); supporting the psychological conditions espoused by Kahn (1990) and underpinned by both social exchange theory and leader-member exchange theory. Relationship between leaders and employees needs to be such that social exchange relationship consists of trust and sincerity (Farndale et al, 2011; Hsiung, 2012), both of which are prevalent throughout research of Macleod and Clarke (2009).

We conclude that an employee engagement model can be developed for an engineering alliance, based on Kahn (1990) in areas of meaningfulness, safety and availability. These three shaping conditions can be supported by weaving of work by Maslach and Leiter (2008) and Xu and Cooper-Thomas (2011) and praxis work of MacLeod and Clarke (2009) and Gennard and Judge (2010). The fourth element of organisational commitment of Scholl (1981) can also be used to complete model of employee engagement within an engineering alliance, thus closing gap in knowledge of following;

1. Meaningfulness (Kahn, 1990) can be positively coupled with leadership style (Macleod and Clarke, 2009), concept of control and workload (Maslach and Leiter, 2008) and challenge and autonomy (Xu and Cooper-Thomas, 2011) to form affective engagement (Gennard and Judge, 2010)

2. Availability (Kahn, 1990) can be positively coupled with employee voice (MacLeod and Clarke, 2009), concept of recognition and reward (Maslach and Leiter, 2008) and self-confidence (Xu and Cooper-Thomas, 2011) to form intellectual engagement (Gennard and Judge, 2010)

3. Safety (Kahn, 1990), can be positively coupled with integrity (Macleod and Clarke, 2009) fairness and community (Maslach and Leiter, 2008) and interactions with one another (Xu and Cooper-Thomas, 2011) to form social engagement (Gennard and Judge, 2010)

4. Organisational commitment (Scholl, 1981), can be positively coupled with employee behaviours (Scholl, 1981) and inter-relationships from human perspective (Jambekar, 1995) that form three psychological conditions (Kahn, 1990), leading to enhanced learning and career paths through a better understanding of engineering alliance and its constituent partner's roles.

This employee engagement model offers a novel approach to determine levels of employee engagement within an engineering alliance such that best for project outcomes of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994) can be justified and established.

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Determinants For Achieving Best For Project Success Outcomes Through Optimal Employee Engagement By Organisations Operating Engineering Alliances

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Outline of the Research Problem

The Praxis Problem

- Employee engagement;
    - means different things to different organisations (Macleod and Clarke, 2009; Kumar et al, 2011)
    - has three distinct types (Gennard and Judge, 2010)
    - has been studied for singular organisational constructs only (Macleod and Clarke, 2009; Hawkins and Little, 2011)

The Academic Problem

- Kahn (1990) presents three psychological conditions that need to be managed
- Maslach and Leiter (2008) define an anti-thesis to employee engagement
- Xu and Cooper-Thomas (2011) define leadership as a significant component
- Saks (2006) describes employee engagement as a management fashion
- Success rates are considered to be as low as 9% (Steinhilber, 2008)

The Combined Problem

- Alliances are the preferred engineering contract (Morwood, 2008)
- Alliances are much studied phenomenon (Taylor, 2005)
- How can we achieve the best for project success outcomes of trust, interdependence, co-ordination and communication (Mohr and Spekeman, 1994)?
- How can we make engineering alliances more successful?
- How can we define employee engagement within engineering alliances?
- Nobody has researched if the fusing of two or more organisational cultures (Rahman and Korn, 2011) had an effect on employee engagement.
- The contribution to knowledge would be the advancement of understanding and the development of a model

Research Question

"How can organisations operating in an engineering alliance optimise employee engagement so that best for project success outcomes are achieved?"

Aim

"To develop a collaborative model that optimises employee engagement in an engineering alliance, evidencing achieved project outcomes."

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Objectives

- To identify and justify the main theories associated with this thesis, including but not limited to human capital theory, social exchange theory, game theory, cost transaction theory and principal-agent theory;

- To critically analyse and review the current literature pertaining to systems thinking, alliancing contracts and the constituent components that make up a team, including but not limited to leadership, trust and conflict, utilitarianism and pluralism;

- To compare and contrast three case studies, examining and determining the factors that determine best for project success factors, based upon employee engagement, attitudes and behaviours;

- To evaluate and review the effectiveness of employee engagement in an alliancing environment, determining the optimum level of engagement required to achieve best for project success outcomes;

- To develop a model that can be used for future alliance contracts, enabling organisations to adopt employee engagement that optimises the best for project success outcomes.

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Alliances

- Solesvik and Encheva (2010) suggest alliances are a means to address the scarcity of human resources (Taylor, 2005), bridging a gap in knowledge (Walker and Johannes, 2003) and capacity between current human resources and expected future requirements (Hoffmann, 2001). to strengthen their position (Hamel et al, 1989; Yang, 2009; Inkpen and Ross, 2001).

Engineering Alliances

- An alliance that is contextualised in the engineering sector; whereby alliancing contracts have been in existence for more than 20 years (Morwood et al 2008, Kanter, 2002), .

- *'A partnership between two or more organisations working closely together in an environment of trust and openness (Morwood et al, 2008) that involves the sharing of human resources (Chung et al, 2006; Johnston and Staughton, 2009; Luo and Deng, 2009).'*

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Summary of the Literature Review

Employee Engagement

Positive Engagement (Kahn, 1990)	Disengagement (Burnout) (Maslach et al, 2008)	Leadership Characteristics (Xu et al, 2011)	Praxis View (Macleod et al, 2009)	Engagement Style (Gennard et al, 2010)
Meaningfulness	Workload	Challenge	Leadership Style	Effective Engagement
	Control	Autonomy		
Availability	Rewards	Self Confidence	Employee Voice	Intellectual Engagement
	Recognition			
Safety	Community	Interactions	Integrity	Social Engagement
	Fairness			

Summary of the Literature Review

Best for Project Success Outcomes

- The 'best for project success outcomes' of alliances are perceived to be difficult to establish because of the complexity of an alliance (Chan and Harget, 1993) with respect to its construct as a business model (Morwood et al, 2008). Through the blending of employees from two or more cultures (Rahman and Korn, 2010) to form a singular project team..

- Mohr and Spekeman (1994) describe alliance success as trust, interdependence, co-ordination and communication as individual behavioural characteristics of pooled human resources (Jones et al, 2003) who ensure that participant organisations achieve their stated goals (Kale and Singh, 2009; Finlayson, 2011) to negate the problems of poor communication, cooperation and trust (Chan et al, 2007).

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Organisational Commitment

- Scholl's (1981) organisational commitment is a series of behaviours that recognise the goals and missions of the organisation with respect to the employee. Organisational commitment embodies the three psychological conditions of Kahn (1990) and it is a merging of three conditions through a systems thinking approach.

Systems Thinking

- Systems' thinking assesses inter-relationships from the human resources perspective (Jambekar, 1995) underpinned by established theories (Ballé and Jones, 1995) to determine the relationship of employee engagement within an engineering alliance representing how an organisation and an employee may choose to view their motivations to become part of an engineering alliance through logical thinking..

Theoretical Concepts

- Engineering Alliances
    - Resource Based View
    - Transaction Cost Theory
    - Resource Dependency Theory

- Employee Engagement
    - Motivation Theory
    - Human Capital Theory
    - Leader-Member Exchange Theory
    - Agency Theory
    - Transaction Cost Economics
    - Game Theory

Methodology Employed & Methods Used

Methodology

- The research methodology was a multi-methods approach using both qualitative and quantitative data collection and analysis.

- The research encompasses a subjectivist ontological perspective combined with an epistemological perspective. The philosophical position of the research is delivered through a pragmatic lens and recognising the involvement of the researcher-practitioner within the research itself (auto-ethnography).

- An inductive approach was chosen to deliver the research, underlining the knowledge gap and theory development within the contextualised setting.

STAFFORDSHIRE UNIVERSITY Methodology Employed & Methods Used

Methodology

- The methods utilised for the study were; ethnography (of which the concept of bias was overcome using case studies), questionnaires, semi-structured interviews and observations.

- The building of theory was developed by applying grounded theory, with methods that sought triangulation of findings – this included coding of data with deliberate design to manage any personal researcher bias that may have been imported into the research through the auto-ethnographic lens. This deliberative research design included the development of three case studies that utilised a cross sectional time horizon.
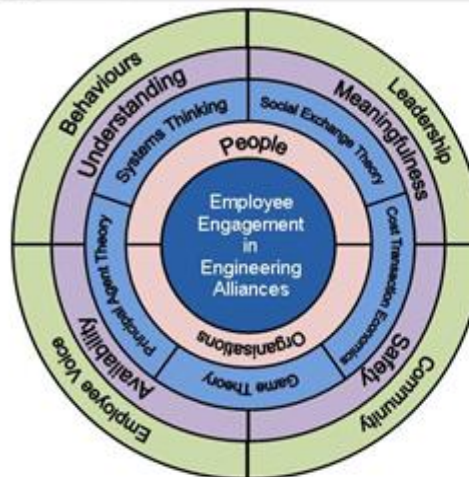
Delivering the Analysis

- Creates a series of demographics

- Questionnaire focuses on the demographics

- Interviews focus on selected participants; those who filled in the free form text on the questionnaire

- Uses five theoretical concepts to drive the interviews and observations, using grounded theory and multi case study analysis

Developing the Model

- Used the Analysis to simplify the model for weaving theory and praxis

- Focuses on people and organisations

-
- Has five theoretical concepts
- Has four quadrants'

- Has a significant component per quadrant

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Professional Development

- Ability to weave theory and praxis to solve a real contextual problem
- Development of a critical thought process

Contribution to Professional Practice

- The research developed an employee engagement model that uses five theoretical concepts of: systems thinking, social exchange theory, game theory, principal-agent theory and cost transaction economics.

- The research findings suggest a positive correlation exists between people and organisations through elements of: 'safety, availability and meaningfulness' for people and 'understanding' for organisations; leadership, community, employee voice and behaviours further underpin these components. It is the combination of these components that evidence best for project success outcomes of trust, interdependence, co-ordination and communication.

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