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The impact of organisational values on the transfer of technical and non-technical knowledge in strategic alliances: A comparative study

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Abstract

Organisations are faced with the reality of having to compete on the global market. It has therefore become critical now more than ever, for managers of these organisations to adopt strategies that will ensure competitive advantage and sustainability into the future. Knowledge has been identified as a strategic asset that can be leveraged to gain this competitive advantage. Unfortunately, the nature of organisations prevents them from having the ability to hire new individuals each time a knowledge gap is identified. Strategic alliances have identified as platforms where knowledge possessed by an alliance partner can be accessed by the other party through the process of knowledge transfer. In order for this process to be effective, both the teaching and the learning partner have to have certain organisational values that promote the transfer of knowledge.

This study investigated the organisational values that promoted knowledge transfer in strategic alliances within the context of the construction industry. An additional dimension of knowledge context, i.e. whether knowledge is technical or non-technical, was also investigated to assess if it had a bearing on the organisational values required for knowledge transfer. The study also sought to establish how tensions caused by conflicting values were managed in the context of strategic alliances. The research took the form of an exploratory qualitative study where twelve managers of EPCM/construction companies were interviewed. The insights drawn from the respondents then formed the basis of the research findings.

The research identified willingness to learn, willingness to teach, relationship, trust and quality focus as the top five most cited organisational values that are perceived to promote knowledge transfer in strategic alliances. The conflicting organisational values of adaptability and predictability were found to promote technical and non-technical contexts, respectively, and a model was developed on how to effectively manage tensions between alliance partners. Recommendations were then made to managers and academics.

Key Words

Knowledge transfer

Technical knowledge

Organisational values

Organisational culture

Strategic alliances

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

Sukoluhle Thando Nkala

Signed: _____

Date: _____

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Chapter 1: Introduction to Research Problem

1.1 Introduction

In today's world where organisations have to compete on a global scale, organisations are increasingly beginning to understand and appreciate the importance of knowledge as a strategic resource. The complexity of the global business environment requires organisations to utilise their exclusive resources such as knowledge and capabilities, to develop profitable solutions that meet market requirements faster than their competitors (Crivelli & Grimaldi, 2009). For this reason, organisations need to facilitate knowledge transfer because the intellectual capital of a company has become a key differentiating factor (Dave & Koskela, 2009).

The subject of knowledge transfer has been receiving increased focus over the past decade with authors like Inkpen (2008), Inkpen & Tsang (2005), Inkpen & Currall (2004) and Simonin (2004) being at the forefront of research on knowledge transfer in the context of strategic alliances. Strategic alliances can be in the form of long term supplier-buyer relationships, outsourcing agreements, collaborations with customers, competitors and sub-contractors, licensing agreements and joint ventures (Genç & İyigün, 2011, Crivelli & Grimaldi, 2009). Strategic alliances therefore allow organisations to increase their knowledge base quickly and cheaply compared to other mechanisms such as outsourcing (Genç & İyigün, 2011).

Studies by Pothukuchi, Damapour, Choi, Chen & Park (2002) looked at the role of both national and organisational culture on strategic alliances. There have been several studies on the role of trust in the performance of strategic alliances (Robson, Katsikeas & Bello, 2008; Inkpen & Currall, 2004; Luo, 2002).

In addition, knowledge transfer within a single organisation has been has been investigated from the context of subsidiaries of multi-national enterprises (Noorderhaven & Harzing, 2009) and in international acquisitions (Sarala & Vaara, 2010; Birkinshaw, Bresman & Nobel, 2010). Issues pertaining to cultural dimensions and their influence on knowledge transfer however, still require further study (Stanek, 2004; Meier, 2011).

Previous literature has provided a number of testable statements about the factors that influence inter-organisation knowledge transfer in alliances. The key issues that influence the extent of and have an impact on knowledge transfer were identified as trust, national culture and organisational culture; which is made up of assumptions, values and norms that are rooted in organisational practices (Boh, Nguyen & Xu, 2013). Based on the above definition, organisational values form a sub-set of organisational culture. Organisational values are social norms that determine acceptable ways of how people interact, they are therefore easy to observe and interpret (Alavi, Kayworth & Leidner (2006). Little research has been done on this aspect of organisational culture, it is for this reason that the study investigated the impact of organisational values on knowledge transfer in strategic alliances (i.e. between different organisations from at least two different countries of origin).

The research was conducted in the context of the construction industry, and specifically within of global Engineering Procure Construct and Management (EPCM) companies that often partner with other organisations to form of strategic alliances for the execution of large projects.

The management of knowledge in the construction industry is of paramount importance due to the fact that construction by its very nature is an information intensive industry. Each project presents a unique set of challenges, and also generates a significant amount of knowledge during execution (Dave & Koskela, 2009). Construction also brings together a number of different organisations

that have to work together, with varying responsibilities during different stages of the project lifecycle. For this reason, knowledge has been viewed as strategic asset which is required to improve the efficiency of the construction process by fostering innovation, minimise rework as well as time and cost overruns. (Dave & Koskela, 2009).

Organisations are by their nature a melting pot of different skills and competencies. The study refers to technical knowledge as substantive expert knowledge directly related to the core business of the organisation. In the case of the construction industry, this referred to design, construction and site engineering, project management and contract management knowledge. The type of knowledge possessed by the remaining functions, which were typically commercial in nature, was referred to as non-technical knowledge, for example procurement, legal and finance knowledge.

It must be noted however that based on the above definition, whereas legal knowledge would be regarded as technical in a law firm, in the construction industry it is regarded as a support function and hence as non-technical knowledge. The study went further to determine, if in-fact, there is a distinction between the organisational values that impact technical knowledge as opposed to non-technical knowledge.

1.2 Research Problem

While research on knowledge transfer in strategic alliances exists, the relationship between knowledge transfer and organisational values has not been sufficiently investigated (Zheng, Yang & McLean, 2010). This research study aims to close this gap in the literature.

In addition, this research study sought to critically examine whether the transfer of the two types of knowledge typically found in organisations; technical and non-technical (commercial) knowledge were influenced by the same underlying organisational values. It also investigated how conflicting values between alliance partners, if any, were managed.

1.3 Research Objectives

The objective of this research was to compare the impact of organisational values on the transfer of technical and non-technical knowledge. This study simultaneously shed some light on the organisational values that have the most impact on knowledge transfer, as well as identified any conflicting values that may promote technical knowledge transfer but impede non-technical knowledge transfer. Furthermore, this study sought to make recommendations and propose a model on how to manage conflicting values to ensure successful knowledge transfer in strategic alliances.

1.4 Academic Contribution

By focusing on the organisational values that impact knowledge transfer in strategic alliances, this research reviewed in detail the literature on the subjects of knowledge transfer in strategic alliances and organisational values' influence on knowledge transfer in all contexts. There is already significant literature on both of the above mentioned fields of study. This research therefore aims, firstly to merge the three broad subjects of knowledge transfer, strategic alliances and organisational values, and secondly to introduce the additional dimension of knowledge context i.e. whether the knowledge is technical or non-technical. This study makes a theoretical contribution to the subject of knowledge transfer from this under-researched perspective based on the perceived knowledge gap found in the literature.

1.5 Business Relevance

Research on knowledge transfer is important in knowledge intensive industries such as chemicals, computers, electronics, pharmaceuticals, telecommunications and construction (Meier, 2011; Dave & Koskela, 2009). How these organisations manage their knowledge resources is a key determiner of competitive advantage and long term business sustainability. This is in-line with the knowledge based view of the firm which emphasises that an organisation's ability to create and effectively use knowledge is the single most important source of competitive advantage (Grant, 1996; Zheng *et al*, 2010).

Management literature refers to the importance of managers emphasising and rewarding specific organisational values that can drive positive behavior such as innovation (Hogan & Coote, 2014) and knowledge sharing. Managers are ultimately the custodians of organisational culture in any organisation. This implies that managers can influence values and norms which become artifacts such as organisational rituals, language, stories and physical configurations (Tellis et al, 2009).

Although the research is set in the context of strategic alliances within the construction industry, it also has applications in the fields of project management and project based organisations (PBOs) such as IT firms.

This report is structured as follows:

1. First, a review of literature on the subject is provided. This considers the subjects of knowledge transfer including an understanding of the knowledge and resource based views of the firm, strategic alliance

literature and organisational culture through the lens of organisational values.

2. This was then followed by a description of the research methodology utilised.
3. Finally, a discussion of the findings and recommendations for future research.

Chapter 2: Literature Review

2.1 Knowledge, knowledge management and knowledge transfer

According to Kathiravelu, Mansor, Ramayah & Idris (2014), knowledge is an important organisational asset that significantly impacts business operations. This has resulted in significant focus on the study of knowledge and its management in the organisational context. Research has shown that organisations that manage their knowledge resources, both within individuals as well as collectively, generally perform better (Boone & Ganeshan, 2008). Smith (2001) stated that historically, it was organisations that had access to capital, raw materials and labour that were the most likely to succeed. However, with the dawn of the information age, knowledge has become a steadily increasing corporate asset (Smith, 2001).

There are different schools of thought regarding the role and value of knowledge in organisations. The knowledge based view of the firm regards knowledge as the most important strategic resource that an organisation possesses (Cantú, Bustani, Molina & Morereira, 2009). The knowledge based view emphasises that an organisation's ability to create and effectively use knowledge is the single most important source of competitive advantage (Grant, 1996; Zheng *et al*, 2010).

On the other hand, the resource based view states that an organisation's competitiveness is derived from a rare mix of both tangible and intangible assets such as management skills, processes and procedures, information and knowledge (Barney, 1991; Zheng *et al*, 2010).

Mowery, Oxley & Silverman (1996) and Meier (2011) also highlight other theories such as the dynamic capabilities perspective, economies of innovation and organisational learning perspective.

This research falls in the middle of both the knowledge based view and the resource based view as both schools of thought are relevant in building the theoretical basis for this study.

According to Smith (2001), knowledge is created from the transformation of data into information then into knowledge. Whereas “data” is considered as raw facts that have not undergone any sort of processing and “information” involves deriving some meaningful interpretation of the data, knowledge involves the use of one’s perception, skill and experience to process the information (Ajmal & Koskinen, 2008).

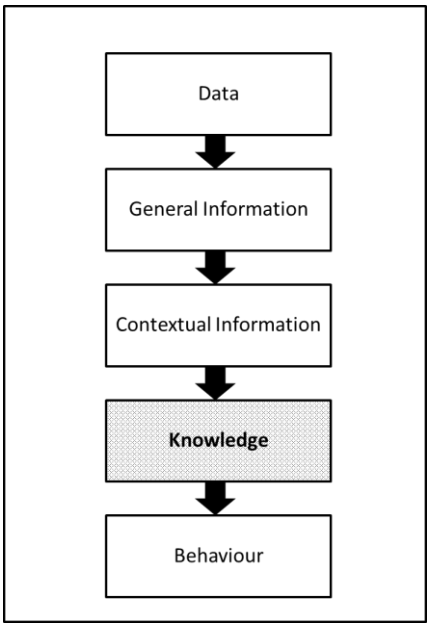

Figure 1: Process of converting data into knowledge and behaviour adapted from Ajmal and Koskinen (2008)

Data can be found in many forms, but is typically numeric or a consolidation of basic observations. Smith (2001) states that data in itself is of little use without

human intervention to interpret and extract information that is relevant, has purpose and most importantly, context. She goes on to say that information in turn only becomes valuable when it is applied on the job, because it is at this stage when it becomes knowledge. Alavi and Leidner (2001) state that knowledge is information that in processed in the minds of individuals, therefore it is personalised and may or may not be new, unique, useful or accurate. Smith (2001) also states that the ultimate goal is to move beyond knowledge to behaviour, and it is companies that develop ways to find, sort, use, store and retrieve this valuable knowledge effectively that are successful. However, Venters (2009) argues that the assumption of a hierarchical relationship from data to information to knowledge with each varying along a dimension such as context, usefulness or interpretability could be flawed and possibly misleading.

Knowledge can be classified as either explicit or tacit. Nonaka and Takeuchi's (1995) theory builds on Polanyi's (1966) distinction between explicit and tacit knowledge being that explicit knowledge can be formally codified, while tacit knowledge is personal, hard to articulate and is action driven. Because of the relative ease of codifying explicit knowledge, it is easy to transfer (Meier, 2011) and is typically facilitated by information and communication technology (ICT) as a strategic enabler (Stanek, 2004). In contrast, tacit knowledge cannot be easily transferred or imitated because of the difficulty in codification and its teachability (Zander & Kogut, 1995). In summary, the degree of tacitness determines the ease of knowledge transfer (Simonin, 2004; Meier, 2011).

Because of the difficulty in articulating tacit knowledge, it is often presented in different forms of expression such as metaphors and drawings. Ajmal and Koskinen (2008) also consider tacit knowledge as being a summation of feelings, intuition, insight, significant skill and experience applied in a specific context. For the reasons stated above, the transfer of tacit knowledge is typically very slow and extremely costly (Grant & Baden-Fuller, 2004).

It was previously believed that because explicit knowledge represented how knowledge is organised i.e. process, and tacit knowledge represented how work is actually carried out i.e. practice, then these two types of knowledge presented a tension between process and practice (Smith, 2001). It is clear however, that knowledge always incorporates both aspects to a certain degree. Evangelista and Hau (2009) find that the transfer of explicit knowledge is accompanied by the transfer of tacit knowledge. Smith (2001) suggests that effective organisations will tend to use tacit knowledge to drive creativity and innovation, and explicit knowledge to establish how things should be done in order to create a predictable environment.

Knowledge management is a broad and continuously growing field of study. In Inkpen's (2000) research, he explains that "the essence of the firm is its ability to create, transfer, assemble, integrate, and explore knowledge assets, a process that has come to be known as knowledge management." He further defines knowledge management as a conscious co-ordination and monitoring of knowledge processes. Similarly, Alavi, Kayworth and Leidner (2006) describe the concept of knowledge management as the creation, storage, transfer, and application of knowledge in organisations. It is only organisations with management that openly accept and support efforts to put knowledge management interventions in place, that are likely to preserve their valuable human and knowledge resources (Smith, 2001).

Knowledge transfer is thus an important and most researched aspect of knowledge management. Welch and Welch (2008) define knowledge transfer as the process whereby knowledge is disseminated or diffused. Knowledge transfer is by its nature a very complex process. De Korte (2003) states that this complexity comes from the intersection of numerous variables such as learner characteristics, transfer tasks and contexts. As a result, organisations will vary widely in their ability to successfully transfer and absorb knowledge (Squire, Cousins and Brown, 2009). Previous research has shown that for organisations

to be effective in transferring knowledge, they need to deliberately and proactively adopt knowledge management practices (Meier, 2011).

Failure to establish these practices in organisations will result in the tendency to either hide or hoard knowledge. Knowledge hiding is defined as an individual's intentional undertaking to withhold knowledge that has been requested by another person.

This can be distinguished from knowledge hoarding which is defined as accumulating knowledge that may or may not be used in the future (Connelly, Zweig, Webster & Trougakos, 2012).

2.2 Technical and Non-technical knowledge transfer

This study will compare the transfer of technical knowledge and contrast this to commercial/non-technical organisational knowledge. Kim, Williams, Rothwell and Penalozane (2014) state that one of biggest deficits in the workplace is that of knowledge workers, such as scientists, engineers, and IT professionals. Rothwell (2011) defines technical talent as being technical, scientific and professional workers that work in contexts that require specialised knowledge, professional judgment or specialised training to perform their work. These individuals possess critical skills, that are particularly scarce, and the current shortage will be compounded by the fact that as the global workforce ages, the number of younger workers available to meet the demand is decreasing (Stuart, Maurice & Peter, 2000; Dychtwald, Erickson & Morison, 2013). In the age of globalisation, this type of expertise and its retention is a growing source of competitive advantage (Rothwell, 2011).

The complexity and ambiguity of technical information has led to the need for knowledge senders and recipients to develop cognitive structures that will make complex information more accessible within and across organisations (Van Burg, Berends & Van Raaij (2013). This is a great challenge for many organisations, and hence the need to exploit various avenues of obtaining technical knowledge, one such avenue is through the establishment of strategic alliances.

2.3 Strategic Alliances

Strategic alliances are an important component of international business (Mowery, *et al*, 1996). The definition of strategic alliances has been the subject of much debate amongst academics, this study will utilise Gulati and Singh's (1998) definition of a strategic alliance as being a voluntarily initiated co-operative agreement between organisations that involves exchange, sharing and co-development. Inkpen and Currall (2004) describe various types of strategic alliances; these include joint ventures, licensing agreements, distribution and supply agreements, research and development partnerships and technical exchanges. According to Mowery *et al* (1996), the formation of strategic alliances is often driven by the need to acquire new technical skills or technology capabilities from alliance partners. This is in line with the view that alliances create opportunities for exploitable learning; hence knowledge transfer can be viewed as an important collaborative objective (Inkpen, 2008). The study applies to all the above mentioned types of strategic alliances where there is a transfer of technical and/or non-technical knowledge.

2.4 Knowledge transfer in strategic alliances

In-line with Gulati and Singh's (1998) definition, Meier (2011) describes strategic alliances as voluntary agreements between organisations with the

intention of jointly creating, transferring and applying knowledge in order to generate commercial benefits. Organisations share knowledge in inter-organisational collaborations because this process yields the benefits of improved innovativeness (Van Wijk, Jansen & Lyles, 2008). Other reasons commonly cited for forming alliances are to gain access to new markets, reduce and share both risks and costs, improve efficiency, as well as to get access to external knowledge (Kogutt, 1988; Grant & Baden-Fuller, 2004; Meier, 2011).

Tsang (2002) stated that firms that form alliances, have been found to achieve higher levels of collaborative know-how. For this reason, organisations will tend to acquire knowledge through outsourcing (consultants) and strategic alliances. According to Khanna and Palepu (1999), international connections with business partners may improve an organisation's competitive advantage by providing access to capital, talent, reputational and technological resources that are hard to come by particularly emerging market economies.

Recent trends have seen an increase in the collaboration between independent organisations. Knowledge transfer in these contexts involves organisations engaging in activities that allow them to access resources outside their boundaries (Grant & Baden-Fuller, 2004). Needless to say, organisations need to establish the optimal balance between knowledge that is created internally, and that which should be acquired from external organisations (Oxley & Wada, 2009).

Strategic alliances have utilised knowledge as a competitive asset tactic for organisational learning (Mowery *et al*, 1996). Alliance learning can be considered from two different perspectives, learning about the alliance partner and learning from the alliance partner (Inkpen & Currall, 2004). Inkpen (2002) defines five antecedents of alliance learning:

1. Learning partner characteristics
2. Teaching partner characteristics
3. Knowledge characteristics
4. Relationship factors
5. Alliance form

These are very similar to characteristics of the alliance partners, characteristics of their interaction and relationship and characteristics of knowledge, which were the three main factors identified by Meier (2011) as having the most impact on knowledge transfer in strategic alliances. Alliance partnerships are made up of learning and teaching partners, it is therefore the learning intent and knowledge protectiveness, respectively, of the two partners that will be determinants of successful knowledge transfer. Learning intent is an organisation's motivation to learn from its partner or collaborative environment (Simonin, 2004). Learning intent has been found to be a good motivator for alliance learning, particularly on organisations that are trying to enhance their capabilities and drive innovation (Yaprak, 2011). Simonin (2004) also found that under a competitive alliance regimes, partner protectiveness inhibited knowledge transfer. Relationships in strategic alliances are characterised by inter-firm trust, and these require a significant investment of time and money (Stanek, 2004). Trust is defined as the expectation of trustworthiness that is derived from an alliance partner's reliability or competence (Robson et al, 2008).

Gupta and Govindarajan (2000) posited three levels of knowledge transfer i.e. nodal (focusing on the behaviour of one party), dyadic (focusing on the joint behaviour of a pair), and systemic (focusing on the behaviour of a system consisting of providers and seekers) levels. This points to the fact that the individual characteristics of the individuals and/or of the two organisations are an important contributor to the likelihood of success of the knowledge transfer process. This study looked at knowledge transfer on the nodal and dyadic

levels, specifically by investigating the teaching partner's characteristics component defined in Inkpen's model as well as the joint behavior of the two organisations. This is because sufficient insights could be drawn about alliance characteristics from the teaching partner's perspective.

Van Burg *et al* (2013) defined inter-organisational knowledge transfer as the process whereby organisations exchange, receive and are influenced by the knowledge of other organisations. Organisations continue to adopt inter-organisational knowledge transfer as a way of addressing knowledge deficiencies. Although strategic alliances are often viewed as being formed with the sole intention of transferring knowledge, Grant and Baden-Fuller (2004) make a distinction between knowledge accession and knowledge acquisition. They define knowledge acquisition as the transfer of knowledge resources between firms with the aim of acquiring knowledge in order to learn. Knowledge accession on the other hand, amalgamates the specialised knowledge of the alliance partners in order to create synergies that will benefit both organisations (Buckley, Glaister, Klijn & Tan, 2009). The calibre of knowledge created would not be attainable if the individual companies worked independently.

Strategic alliances offer unique but complex platforms for people with diverse skills to work together. This results in richness in the depth and breadth of knowledge that is often alliance and/or project specific. Grant and Baden-Fuller (2004) assert that because knowledge creation requires specialisation, it is less costly to reproduce it through interactions with other organisations than it would be to produce it internally

It should be noted that alliances will have a different knowledge transfer mandate based on the type of industry within which each alliance member operates. Industries that by nature are very knowledge intensive such as chemicals, computers, electronics, pharmaceuticals, telecommunications and construction (Meier, 2011; Dave & Koskela, 2009), will generally have alliances

with a greater knowledge focus than less knowledge intensive industries. The make-up of the alliance is also an important determinant of the rationale and logic of knowledge transfer. Alliances involving a Western partner with a partner from an emerging country will tend to have the Western organisation playing the role of teacher, with the emerging partner as student (Meier, 2011). This construct fundamentally changes the dynamics within the alliance.

2.5 Legal considerations in strategic alliances

The use of legal contracts is a much debated topic in alliance literature. Stanek (2004) explains how some authors feel that formal contracts protect the parties from opportunistic behaviour, while others feel that they are costly, stifling and do not lead to more committed alliances.

The issue of intellectual property rights is an important and specific consideration when it comes to technical knowledge transfer. Van Burg *et al* (2013) state that these rights can be transferred through licensing agreements or in some alliance contracts, shared rights can be negotiated e.g. in joint ventures. Issues pertaining to cultural aspects of knowledge transfer still require further study (Stanek, 2004; Meier, 2011).

2.6 Culture and organisational culture

Many definitions of culture exist; the most widely accepted is Hofstede's (1980) definition of culture being the patterns of beliefs and values that expose themselves in practices, behaviours and artefacts that people within the same organisation or nation have in common. Culture can be explored at different levels, the most researched being at the national and organisational levels (Boh *et al*, 2013). It is also accepted that by its nature, organisational culture is

nested in national culture (Pothukuchi *et al*, 2002). Boh *et al* (2013) highlight the complexity in determining whether or not an organisation can truly be considered as having a single uniform culture, or whether it is in fact more accurately depicted as a multitude of subcultures. According to Zheng *et al* (2010), the internal characteristics such as organisational culture are a critical source of success. “Culture is to an organisation what personality is to the individual” (Ajmal & Koskinen, 2008). This study investigates the culture from the perspective of organisational culture.

2.7 Organisational culture and knowledge transfer (Knowledge culture)

Because organisational culture establishes the context for social interaction (Wiewiora, Trigunarsyah, Murphy & Coffey, 2013) and shapes interpersonal relationships (Ajmal & Koskinen, 2008), it will impact on how people communicate and share knowledge. It is therefore important to create a dominant culture that is necessary for knowledge transfer. Many recent studies have investigated the role of organisational culture on knowledge transfer (Suppiah & Sandhu, 2011; Sarala & Vaara, 2011). Zheng *et al*’s (2010) study demonstrated that organisational culture has a greater contribution to knowledge transfer than organisational strategy and structure. Organisational culture is therefore a powerful way of eliciting desired organisational outcomes (Hogan & Coote, 2014). Recent studies investigated the role of organisational culture on knowledge transfer (Suppiah & Sandhu, 2011; Sarala & Vaara, 2011). It must be noted that although differences in organisational culture can have positive effects such as creativity and diversity, it can also have negative consequences such as knowledge hoarding which contributes to the cost of knowledge transfer (Squire, Cousins & Brown, 2009). This inherently means that organisations that want to promote knowledge transfer have to pay special attention to organisational cultural practices.

In order for individuals to learn from people from a different culture, they must be open and appreciate the value of diversity in the workplace (Ambos and Ambos, 2009). Boh *et al* (2013) identified trust, national culture and organisational culture as all having an impact on the extent of knowledge transfer. In their findings they also established that if the sender and recipient do not share common beliefs, assumptions and cultural perceptions, the knowledge transfer process can be particularly challenging. In the case of knowledge transfer between organisations from different countries of origin; Cho & Lee (2004) could not establish definitively if this was due to differences in national culture or organisational culture.

Studies have established that two distinct aspects of culture exist in organisations, visible and invisible culture, both of which have a significant impact on knowledge transfer (Kathiravelu *et al*, 2014). Visible culture refers to the philosophy, mission and entrenched values that influence an organisation's daily operations. Invisible culture describes the unspoken core values that guide the way people in the organisation perform their duties (McDermott & O'Dell, 2001).

The notion of a "knowledge culture" was coined to describe an organisational culture that facilitates knowledge transfer. In such instances there are positive attitudes regarding knowledge, and a general openness to learning and sharing knowledge (Mueller, 2012). According to De Long and Fahey (2000) the following are four ways by which organisational culture can influence knowledge transfer:

1. Cultural assumptions influence the kind of knowledge that is considered valuable enough to be shared
2. Culture determines the relationship between individual and organisational knowledge
3. Culture provides the context for knowledge transfer

4. Cultural assumptions directly affect knowledge dissemination within and across organisations

For the reasons stated above, organisational culture can be regarded as having a significant impact on knowledge transfer.

2.8 Organisational culture as an impediment to knowledge transfer

There have been several studies have revealed that impact of culture on knowledge transfer is not always positive. Failure of knowledge transfer has also been attributed to cultural factors (Ajmal & Koskinen, 2008; Suppiah & Sandhu, 2011). Although there is a myriad of factors that impede knowledge transfer, organisational culture has been cited as one of the most important. This is because organisational culture dictates what knowledge is important or can be ignored, and as a result what knowledge should be shared or hoarded (Zheng *et al*, 2010). It therefore serves as a filter in the rationalisation process when deciding whether or not to transfer knowledge.

It has been asserted that certain aspects of organisational culture can serve as a hindrance to successful knowledge transfer within or between organisations. Cultural dimensions such as manager's commitment, emotional intelligence, fear, hierarchical organisation structures, age differences, gender differences, uncertainty and conflict avoidance, all impede knowledge sharing (Kathiravelu *et al*, 2014). The challenge with knowledge transfer is that it is not only a reflection of the prevailing culture of the organisation, but is also largely influenced by the individual employee's imbedded culture. This has resulted in organisations having to come up with innovative ways of enticing employees to transfer knowledge, often in the form of extrinsic rewards. Kathiravelu *et al* (2014) however acknowledges that these reward philosophies are not always successful in achieving a knowledge sharing culture.

It has been argued, however, that the premise of associating differences in organisational culture with conflict and therefore as having a negative impact on knowledge transfer, is flawed. Sarala & Vaara (2010) suggest that knowledge transfer can still take place provided that the organisational cultural differences correspond to different but potentially complementary beliefs, values and practices.

2.9 Organisational culture and organisational values

Organisational culture was widely researched by Schein (1985) who described it as a continuous and dynamic interaction among basic assumptions, values and artefacts. Organisational values are therefore a sub-set of organisational culture. As stated by Alavi, Kayworth and Leidner (2006), unlike basic assumptions which are difficult to observe and artefacts which can be difficult to interpret, values are both easier to observe and interpret, and also more widely studied in the context of organisational culture. Organisational values are defined as social norms that determine acceptable ways of how people interact. Furthermore, it is believed that these values are only applicable to the extent that they are shared across the organisation (Alavi et al, 2006).

A number of authors have researched either knowledge transfer in the context of strategic alliances (Grant & Baden-Fuller, 2004; Meier, 2011; Oxley & Wada, 2009), or knowledge transfer with organisational values as a mediating effect (Mueller, 2012; Alavi et al, 2006). None of these research studies had attempted to link knowledge transfer to organisational values in strategic alliances.

Figure 2 below shows favourable and unfavourable characteristics of a knowledge culture based on Mueller's (2012) literature review. "Good" cultural values such as sharing, openness, collaboration and trust will lead to

knowledge sharing behaviour, whereas "bad" values that emphasise individual power and competition will lead to undesirable effects such as information hoarding (Alavi et al, 2006). Organisations should therefore seek to encourage and reinforce cultural values that align with knowledge sharing behaviours.

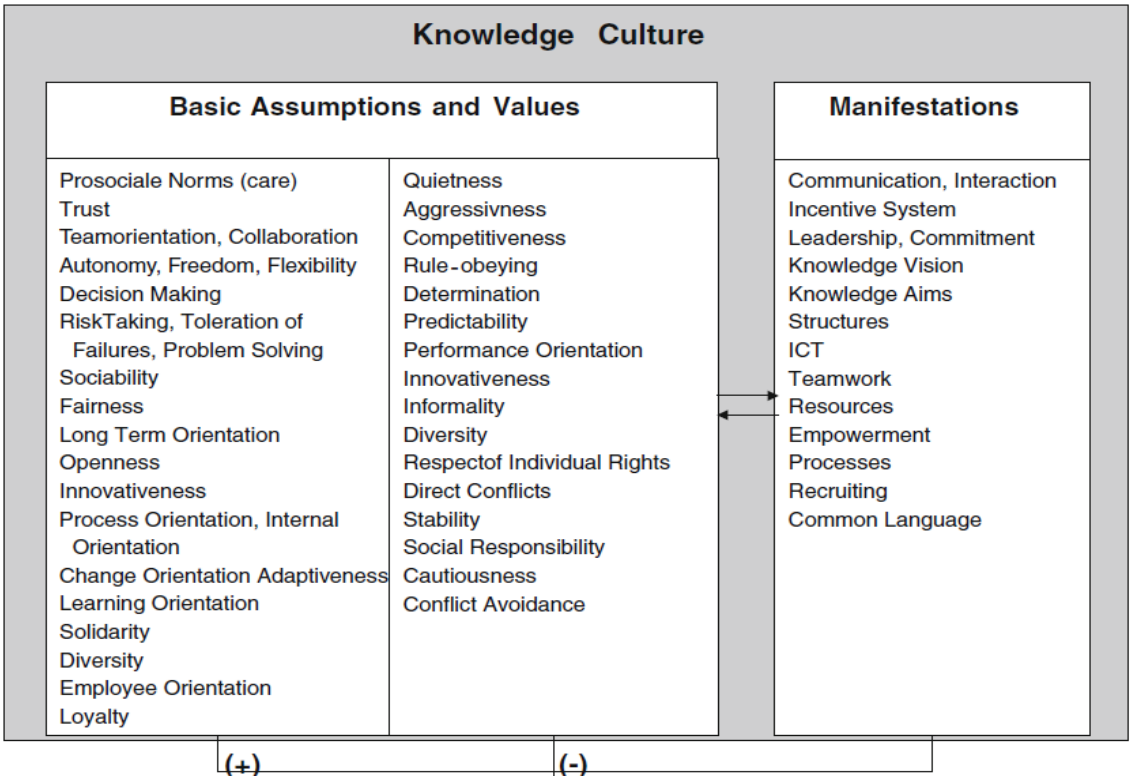

Figure 2: Components of a knowledge culture (Mueller, 2012)

Mueller (2012) acknowledges that there still needs to be more attention paid to understanding of not only knowledge-friendly organisational values, but also values that impede knowledge transfer and how these manifest themselves in organisations. It is important to note that organisational values are not all related. Alavi *et al* (2006) therefore suggested that future research should look into how to effectively manage the tensions created among competing values so that knowledge transfer initiatives are successful. This research aims to identify which organisational values have the most impact on technical and non-technical knowledge transfer, and to propose strategies on how to best manage values that impede knowledge transfer in strategic alliances.

Chapter 3: Research Questions

This research combines studies on knowledge transfer in strategic alliances with that of organisational values from the perspective of technical and non-technical knowledge. The literature review was used to develop the key research questions that will be investigated in the study. The deductive approach as defined by Saunders & Lewis (2012) brought to light the following three fundamental research questions as suggested by Mueller (2012) that require further exploration:

Research Question 1

Which organisational values promote knowledge transfer in strategic alliances?

Research Question 2

What organisational values promote technical knowledge transfer but impede non-technical knowledge transfer?

Research Question 3

How can tensions created between conflicting organisational values identified in Research Question 2 be better managed in order to ensure successful transfer of both technical and non-technical knowledge?

Chapter 4: Research Methodology

The basis of this study was derived from the literature reviewed in chapter 2 which highlighted the need to further investigate the link between knowledge transfer, strategic alliances and organisational values. In addition, this research attempted to assert whether the type of knowledge i.e. whether it is technical or non-technical, had any bearing on the organisational values required for successful knowledge transfer between alliance partners. This chapter discusses the research methodology utilised to conduct the study.

Because culture (and therefore values) is by its nature very complex, the reductionist approach of quantitative research was not appropriate for this study (McCracken, 1988). Instead, a qualitative research approach was adopted because it best captured the context, personal interpretation and experience of the respondents (Marshall & Rossman, 2006). The study therefore utilised the opinions expressed by the respondents i.e. primary data, as opposed to codified secondary data from the respective organisations, for example formal reports.

The research was highly exploratory in nature, as it sought to draw new insights, ask new questions and to assess the topic of knowledge transfer in strategic alliance from the less researched perspective of organisational values (Saunders & Lewis, 2012). An exploratory study is generally undertaken when the researcher possess little or no scientific knowledge about the situation they want to examine but have reason to believe that there are elements worth discovering (Stebbins, 2008). The research method, design, population, sampling and data techniques employed as will be demonstrated in the next sections of this chapter, were carefully selected to achieve the objectives of this study.

4.1 Research design

Because the study focussed on individuals' lived experiences, semi-structured depth interviews were utilised (Marshall & Rossman, 2006). According to Zikmund *et al* (2013), depth interviews involve a one-on-one interview between the researcher and respondent, where the researcher poses questions that are followed up by a probe for additional elaboration. The motivation for adopting this approach was to gain considerable insight from each individual so as to illicit further and detailed understanding of unusual behaviours (Zikmund *et al*, 2013).

Two techniques were utilised to conduct the semi-structured depth interviews, face-to-face interviews as well as telephonic interviews for respondents that were located outside of the Johannesburg area and/or outside of South Africa.

Depth interviews were an appropriate research instrument to use on the target sample as the calibre of respondents had easy access to both telephonic and electronic communication media.

According to Zikmund *et al* (2013), interactive communication has the advantage of high rates of participation and cooperation of respondents, minimising non-response bias. Interactive communication also had the benefits of real time feedback from the respondents, allowing the researcher to probe further on complex answers, to adjust the length of the interview to best suit the respondents' availability and to ensure that all questions in the interview schedule were adequately answered by the respondents.

The research was a cross-sectional study with interviews and data being collected at a specific point in time as opposed to over a long period of time as is the case with a longitudinal study.

4.2 Population

The population for this study consisted of all alliance executives, directors and managers who work for global Engineer Procure Construct and Management (EPCM) and construction organisations. The target population had more than one year of alliance experience, managed technical and/or non-technical people and managed contracts and/or construction projects.

4.3 Sampling

4.3.1 Sampling technique

Qualitative studies typically use purposeful or criterion based sampling methods as these result in a sample that has characteristics that are relevant to the research questions (Patton, 2001). The sample selected was a combination or mixed purposeful sample. This is a combination of purposive and snowball sampling of individuals from multiple disciplines that have had at least one year strategic alliance related work experience. Whereas purposive sampling uses the researcher's judgement to select a sample of respondents based on a range of possible reasons and premises (Saunders & Lewis, 2012), a snowball sample uses the respondents to refer the researcher to the next potential respondent.

Because sampling methods are not mutually exclusive, the combined use of purposive and snowball sampling were appropriate for exploratory research as they allowed for the identification of individuals that had diverse alliance experience, and that could provide meaningful insights on organisational values and knowledge transfer. The choice of non-probability sampling techniques was most appropriate because it was not possible for the researcher to obtain a list of the entire population (Saunders & Lewis, 2012).

The sample used had the common thread of having participated in a strategic alliance that involved the transfer of both technical and non-technical knowledge. The researcher opted not to narrow the study down to a specific type of alliance in order to ensure variability in the data obtained.

4.3.2 Sample size

According to Patton (2001), sample size in qualitative studies can vary depending on the sample required to reach saturation whereby no new concepts are emerging, or on the sample needed to ensure that there is sufficient variability in the target population. Patton (2001) goes on to state that sample size can be chosen based on the research approach employed in the study, in the case of phenomenological studies which analyse subjective experiences, the rule of thumb estimates that approximately ten people should be assessed.

The sample size for the study consisted of twelve managers that were selected based on their seniority, years of alliance experience and their level of influence on achieving alliance objectives. The profile of respondents included one director, three engineering managers, three contracts managers, two commercial managers, two project managers and two site managers (as shown in the Table 1 below).

Table 1: Profile of respondents

	Org 1	Org 2	Org 3	Org 4	Org 5	Org 6	Org 7	Org 8
Managing Director		1						
Project Manager			1				1	
Commercial Manager	1		1					
Engineering Manager				1	1			1
Site Manager		1						
Contracts Manager		1	1			1		
Total	**1**	**3**	**3**	**1**	**1**	**1**	**1**	**1**
								12

4.3.3 Unit of analysis

In order to support the research propositions stated above, the unit of analysis for this study was an individual who is an alliance manager that had technical and/or non-technical people reporting to them. Knowledge resides within individuals, therefore the transfer of knowledge is carried out between the organisations by individuals (Squire, Cousins & Brown, 2009). The individual is therefore a useful lens to view knowledge transfer in strategic alliances (Eden, 2009).

4.3.4 Reliability and validity

The study involved interviewing twelve respondents in order to connect their experiences and check the feedback of one respondent against that of others. The structure of the interview utilised open ended questions in order to allow

respondents to draw meaning from their own experiences without being influenced by the researcher's own biases (Seidman, 2006).

4.4 Interview Schedule Development

The interview schedule was developed in order to ensure that there was consistency across all the interviews. The interview schedule initially contained twelve open ended questions which had the ultimate goal of answering the three research questions posed in Chapter 3.

The interview schedule began with an introductory statement that clearly stipulated the purpose as well as the context of the research. Organisational values were defined as a subset of organisational culture, and a clear distinction was made between technical and non-technical knowledge transfer.

The first few questions were related to the profile of the respondent. This served to ensure that the respondent was indeed a manager in an EPCM/construction company and had previously worked in or is currently working in an alliance project. This is in-line with McCracken's (1988) suggested method of opening interviews with questions that are general and non-directive in order to provide respondents with the opportunity to tell their story.

The remaining questions began to delve into the concept of knowledge transfer, with specific emphasis on the context of strategic alliances. The theme of organisational values was then introduced, which often had to be explained again in relation to knowledge transfer. Questions relating to the comparisons between technical and non-technical knowledge transfer were then raised and lastly, those relating to the management of conflicting values between alliance partners.

In order to test the appropriateness of research questions trial interviews were conducted with two line managers in an engineering company as suggested by (Saunders and Lewis, 2012). The pre-test allowed for the researcher to assess the clarity of the questions, the order in which they were posed and the background information required for the respondents to adequately answer the questions. The process resulted in some of the questions being reworded, and some being removed and replaced with new ones. The final interview schedule still had twelve questions, but the questions more adequately covered the themes required to answer the research questions.

4.5 Data collection

The data collection process began with an introductory email that was sent to the Human Resources Departments or individuals within the specific organisations. Once positive responses were received, the researcher went on to schedule the interviews either directly or through the respondents' personal assistants. Twelve semi-structured in-depth interviews were conducted across eight different organisations all in the construction industry, in order to obtain information that is complete and precise, which then be clarified and confirmed as suggested by Zikmund (2013).

Prior to the start of every interview, the researcher requested the respondents to sign a consent form in which the researcher agreed to maintain the confidentiality of the names of respondents and the organisations that are the sources of the data. The interviews were all conducted in English by the researcher and audio recorded. The decision to audio record the interviews was so that the researcher could use the respondent's own words. According to Seidmen (2006), using an audio recording had the advantages of giving the respondent confidence that their words were accurately and responsibly

captured, as well as always having the original data if something was unclear in the transcript. An audio recording also gave the researcher the opportunity think creatively during the interview, instead of focusing on taking notes.

Most of the respondents proved to be engaged and open during the interview process, often substantiating their opinions with real life examples. Probing was often used to encourage further elaboration (Zikmund, 2013). This was often unplanned, but depended on the responsiveness and ability of the respondent to sufficiently answer the questions posed.

The sheets with respondents' contact details, consent forms and audiotapes were safely secured in a place where the names of participants could not be easily accessed and/or accidentally exposed (Seidmen, 2006). The collected data was then sent for transcription where the spoken words from the audio recordings were converted into written text for analysis. The data was then organised in some sort of format for easy retrieval and analysis, this was done according to dates, job title and organisation number (organisations were numbered 1 through to 8) of respondents as suggested by Marshall and Rossman (2006).

4.6 Data analysis

The process of collection and analysis data was iterative, this is because this being a qualitative study, the researcher was able to use insights gained from analysis of earlier interviews to revise and focus future interviews (van den Hoonaard & van den Hoonaard, 2008). The study analysed text data. The data analysis process started with the thorough line-by-line reading and re-reading of the transcripts, then text was grouped based on identified recurring themes and language patterns as prescribed by Marshall and Rossman (2006). These themes then became the basis for coding the data. Reviewing text by codes is

the key component of diagnosing patterns of discussion within the data (Maietta, 2008).

Data was coded and analysed using the data analysis software package ***ATLAS.ti***. This is a computer aided software package that was used to manage and code qualitative data. Once coding was complete, the tool was also used for content analysis which entailed the grouping of themes into categories and then measuring the frequency of codes associated with each of the themes across all the respondents. Conclusions were then drawn based on the observed relationships between the different code themes.

4.7 Research limitations

There are certain limitations that may have influenced findings of the study. The sample was restricted to EPCM companies; therefore the findings may not be generalisable to other types of organisations in strategic alliances. The study also pursued the subject of knowledge transfer from a nodal and dyadic level, however this was based purely from the perspective and opinions of the transferring organisation.

The subjective nature of qualitative research meant that the results were dependent on the researcher's interpretation and this would therefore inhibit generalisability (Zikmund *et al*, 2013). In addition, coding the social world according to distinct and finite themes may have destroyed some valuable data by imposing a limited view on the subject (Marshall & Rossman, 2006).

Another limitation was the fact that respondents were not anonymous in the case of personal interviews, this could have influenced some of their responses in order to avoid social desirability bias. This is the tendency for respondents to

answer sensitive questions a way that they believe will be viewed favourably by the researcher (Zikmund *et al*, 2013). Telephone interviews on the other hand, were more impersonal and respondents were more willing to answer embarrassing and confidential questions.

Chapter 5: Results

5.1 Introduction

The interviews were conducted with twelve managers with alliance experience from eight global construction companies. Half the sample (six respondents) was drawn from two companies, with three respondents being interviewed from different business units of each company. The other six respondents were each from six separate organisations. These included a managing director, project managers, contracts managers, engineering managers, as well as site and procurement managers. These managers, have worked on a vast number of construction projects in emerging economies such as Dubai, Malawi, Mexico, Namibia, Rwanda and South Africa. This research attempted to draw insights from their experiences in different contexts.

Seven of the interviews were face-to face and took place at the respondents' respective offices, the remaining five interviews were conducted telephonically. In some instances not all twelve questions were posed to the respondent because some questions were not applicable to that specific respondent's context.

The results of the interviews conducted are presented in this chapter. The key findings from the interview process will be structured as per the three research questions posed in Chapter 3. For ease of reference the research questions are stated below:

- **Research Question 1:** Which organisational values promote knowledge transfer in strategic alliances?

- **Research Question 2:** What organisational values promote technical knowledge transfer but impede non-technical knowledge transfer?

- **Research Question 3:** How can tensions created between conflicting organisational values identified in Research Question 2 be better managed in order to ensure successful transfer of both technical and non-technical knowledge?

5.2 Summary of interviews

The eight organisations sampled in this study are described in table 2 below. The interviews ranged from twenty two to sixty four minutes in duration based on respondents' availability and openness.

Table 2: Summary of interview durations

Description	Quantity
Number of interviews	12
Total duration of interviews	479 minutes
Average interview duration	40 minutes
Duration of shortest interview	22 minutes
Duration of longest interview	64 minutes

5.3 Research Question 1: Which organisational values promote knowledge transfer in strategic alliances?

A number of organisational values were identified as having a positive impact on knowledge transfer. These values were then ranked according to the number of respondents that identified that organisational value as promoting knowledge transfer in strategic alliances. The organisational values with the highest ranking were considered as being essential for knowledge transfer to take place

between the two organisations. Table 3 and 4 show the various organisational values that promote and impede knowledge transfer in strategic alliances respectively.

5.3.1 Organisational values promoting knowledge transfer in strategic alliances

The study utilised the respondents' opinions on what they perceived to be knowledge transfer related organisational traits, as opposed to the codified/formalised organisational values. More than twenty different organisational values were identified as having an impact on knowledge transfer in strategic alliances as shown in Table 3 below.

Table 3: Organisational values promoting knowledge transfer in strategic alliances

Ranking	Values	Number of respondents	Number of quotations
1	Willingness to learn	7	31
2	Willingness to transfer knowledge	7	13
3	Relationship	7	16
4	Trust	6	10
5	Quality focused	5	9
6	Experience	4	13
7	Commitment	4	10
8	Long term orientation	4	9
9	Open mindedness	4	7
10	Communication	4	6
11	Willingness to make mistakes	3	4
12	Ethics	2	5
13	Honesty	2	5
14	Accountability	2	4
15	Listening	2	4
16	Loyalty	2	4
17	Respect	2	4
18	Adaptability	2	3
19	Collaboration	2	3
20	Sustainability	2	3

The organisational values identified varied considerably from respondent to respondent to respondent. The top ten organisational values identified by four or more respondents are discussed further in the section below.

5.3.1.1 Willingness to learn

Willingness to learn was considered as the organisational value with the most impact on knowledge transfer in the context of strategic alliances with seven of the twelve respondents identifying it as one of the key values. In addition, it was linked to thirty one quotations drawn from the interview transcripts. Willingness to learn was the most frequently cited organisational value by the majority of the respondents regardless of the size and profile of their respective organisations, and their role in the organisation. Some of the respondent's opinions are highlighted below:

"So I think you need to leverage people's desire to progress their careers with their desire to learn and experience it to progress their careers." ***[Organisation3_Commercial Manager]***

"…a learning organisation….a place where training or personal growth is valued." ***[Organisation 3_Contracts Manager]***

"So that's what you see here on many occasions is that either the learner is not open to the fact that they are not an expert… So if they're not willing to take a step backwards and put themselves in a position of a student or learner, it won't work." ***[Organisation3_Project Manager]***

"Knowing that you are a smaller company I think there must be an eagerness or willingness from your side to say thanks for the opportunity, it is great working with a nice big company." ***[Organisation2_Site Manager]***

5.3.1.2 Willingness to transfer knowledge

Seven respondents found willingness to transfer knowledge as a key organisational value. Some of the views expressed are as follows:

"I think the first thing, the first ingredient is that the person or the organisation which is imparting the knowledge, needs to be willing to impart the knowledge." ***[Organisation4_Engineering Manager]***

"Basically you get people who say….., who realise that the pie is bigger for everyone else. It's not that when I teach you this skill, you are going to have to take something. They realise that together we can do more. And I found that, there, they were willing to teach." ***[Organisation4_Enginnering Manager]***

5.3.1.3 Relationship

Seven of the twelve respondents identified relationship as being an important value that promotes knowledge transfer in strategic alliances. The general value of relationship was expressed in the quote below:

"I think you know that the relationship maintenance really starts from day 1, from the day we start to receive the tender till the day we leave the job, [the day] we complete the job. I think especially being contractors fundamentally it is important for us to have a really good and strong relationship with our client, not only to get paid at the end of the job but to be able to get future work out of the client. So what goes into nurturing that relationship would obviously be our service and delivery firstly, and our ability to accommodate our client when he needs us to." ***[Organisation1_Commercial Manager]***

It is important to note that different relationship dynamics applied to the different types of alliance partnerships such as contractor/client, contractor/sub-contractor and contractor/supplier relationships. An example of these dynamics is expressed below:

"It has to be a relationship, a company whose values are built around maintaining a good contractor client relationship, as opposed to an execution based company, where the company is so focused on execution and not so much on the client relationship." ***[Organisation3_Project Manager]***

5.3.1.4 Trust

Trust was mentioned by six of the respondents as being an important organisational value in the promotion of knowledge transfer. The respondents' views about trust are highlighted as follows:

"So we have contractors that we really trust and we have come a long way with but [these contractors] still doesn't have the skills to independently perform. So it makes it a bit easier because we know the guy, we know his attitude and his willingness and we know his shortcomings, so we assist in that from day 1." ***[Organisation2_ Managing Director]***

"When I see you are eager and you are willing we start working on a trust. There is a relationship of trust." ***[Organisation2_Site Manager]***

"…and then obviously the whole trust and honesty and all that stuff is important, but show me an organisation that say that they don't value those things." ***[Organisation3_Project Manager]***

5.3.1.5 Quality focused

The quality focused organisational value referred to the organisation's emphasis and commitment to quality. This value was identified by five respondents, one of whom expressed the view below:

"Really good quality contractors in our area are scarce, so that is why for us it is important to train them." ***[Organisation2_Managing Director]***

"He must try and do the work correctly, he mustn't try and take short cuts because you're going to ruin the relationship because everybody isn't going to accept….so you can't accept sub-standard work or try and bribe your quality engineer to pass it. It's not going to last. It must be part and parcel of whatever you do. Firstly know what your standards are and then keep to those standards." ***[Organisation2_Contracts Manager]***

5.3.1.6 Experience

Experience was cited as a critical organisational value for knowledge transfer by four of the twelve respondents. Opinions of experience were elaborated on by the respondents as follows:

"Because experience does count unfortunately……If you see something, it doesn't mean you can do it. You need to be able to go through the process and learn through mistakes because that's one thing that you need to accept when you employ some of these sub-contractors that haven't got much experience." ***[Organisation2_Contracts Manager]***

"On the receiving end, it needs to be one [organisation] with values of hands on experience or on-the-job training. It needs to be an organisation that values experience over certification." ***[Organisation3_Project Manager]***

5.3.1.7 Commitment

Commitment is often linked with knowledge transfer, especially in the context of strategic alliances. The research results found that four respondents also mentioned commitment as key driver of knowledge transfer. Some of the respondents' views are expressed below:

"I think at the end of the day if you are not committed to your role and responsibility, I think everything else will follow suit. I can come here and be an honest person and be open-minded but if I am not committed to my role or my responsibilities and I am going away." ***[Organisation1_Commercial Manager]***

"Sometimes the people really work hard to make a success of it and make a long term commitment with us." ***[Organisation2_Managing Director]***

5.3.1.8 Long term orientation

Knowledge transfer typically takes time to implement successfully. Four of the twelve respondents identified that long term orientation is an important organisational value required in any knowledge transfer initiative. They expressed their views as follows:

"We sit down and then we ask, 'what do they want to achieve in a 3 – 4 year period?' and then we need to see how we can do that." ***[Organisation2_Contracts Manager]***

"For long term orientation I think the way it will manifest in an organisation is through embedding that [long term orientation] for the required ingredients towards a competitive edge. So what are the skills you have, what are the skills to develop to go forward, where is the gap? Once you have identified the gap then definitely when you are doing your sourcing for consultants/expertise, you look for companies/people who you can engage and then you also make them transfer some of those elements to you." ***[Organisation7_Project Manager]***

5.3.1.9 Open-mindedness

The ability of an organisation to be open to new ideas such as new ways of doing things, is a critical aspect required for the organisation to fully benefit from the knowledge transfer process. Four respondents supported this view. The respondents stated the following:

"In terms of knowledge transfer I think that we are an open-minded organization, even though we are well established we are also a learning organization and we don't have a problem walking into a workshop or a seminar or even into a joint venture and listening to what people have to say, weigh their ideas against ours and have a look at whose ideas are the best or is it a combination of both." ***[Organisation1_Commercial Manager]***

"The same stuff as the other one, a company that values cultural difference, one that values openness and transparency, those types of things." ***[Organisation3_Project Manager]***

5.3.1.10 Communication

Good communication is an integral value in any situation where there is more than one party involved. More-so in knowledge transfer. Four of the respondents supported this view, as expressed below:

"First it [the environment] needs to be enabling. And by that it needs to communicate that the vision is to transfer skills." ***[Organisation4_Engineering Manager]***

5.3.2 Organisational characteristics that impede knowledge transfer in strategic alliances

Seven different organisational characteristics were identified as being an impediment to knowledge transfer in strategic alliances as shown in Table 4 below.

Table 4: Organisational characteristics that impede knowledge transfer in strategic alliances

Ranking	Characteristics	Number of respondents	Number of quotations
1	Stubbornness	3	3
2	Corruption	2	5
3	Cultural difference and diversity	2	5
4	Impatience	1	3
5	Arrogance	1	2
6	Bureaucracy	1	1
7	Selfishness	1	1

It must be noted that although the question regarding the "organisational values" that impede knowledge transfer in strategic alliances was posed in the interviews, a lot of the responses related negative characteristics as opposed to identifying actual values. Also some respondents referred the organisational values that impede knowledge transfer, as simply being the converse of those that promote knowledge transfer. The direct responses that were obtained from the study are tabulated above. Bearing in mind that the term "values" typically has a positive association, and to avoid any confusion in terminology, the remainder of the report will refer to "organisational characteristics" as opposed to "organisational values" when referring to "negative" values.

5.3.2.1 Stubbornness

Stubbornness is an organisational characteristic that can impede successful knowledge transfer. Some of the respondents' comments are seen below:

"If you come hard-headed and say listen 'I've been doing this for twenty years you can't teach me how to do it' and bulldoze your way, maybe the way you have done it for twenty years is not the way our company does it or it is not in line with our quality." ***[Organisation2_Site Manager]***

"The stubborn ones are the guys that think they are too clever and they don't know what construction is about." ***[Organisation2_Contracts Manager]***

5.3.2.2 Corruption

Corruption was found as being a negative contributor to knowledge transfer in alliance partnerships, as expressed in the respondent's comment below:

"…looking at the corruption, I mean today I'm a teacher the following year I'm a multi-millionaire running a big construction company. That's exactly what's happening in South Africa now. I mean most people that are owning these emerging construction companies now were former teachers, former security guards because they knew someone who works there who just gives them a tender." ***[Organisation5_Engineering Manager]***

5.3.2.3 Cultural difference and diversity

Diversity can bring about a lot of complications in strategic alliances, these can filter into the process and prevent knowledge transfer. One of the views is expressed below:

"…if the parties are not accustomed to or value cultural differences, it absolutely will [impede knowledge transfer] so if you have a very provincial company, it's going to be very difficult for it to handle the knowledge transfer." ***[Organisation3_Project Manager]***

5.3.2.4 Impatience

Impatience was found to be an impediment to knowledge transfer. One respondent's opinion is stated below:

"What are the values that would impede knowledge transfer are going to be [sic] sense of immediacy, so knowledge transfer takes time, knowledge transfer is not an overnight sensation. And if you don't have time, or your priority is on immediate results certainly can be an impediment too." ***[Organisation3_Project Manager]***

5.3.2.5 Arrogance

Arrogance creates a wedge between alliance partners and reduces the likelihood of successful knowledge transfer, as described by the respondent below:

"I would say arrogance, you know when I walk around thinking I know it all, and I don't want to listen to you, no matter what you have to say." ***[Organisation1_Commercial Manager]***

5.3.2.6 Bureaucracy

Another organisational characteristic that was found as being an impediment to knowledge transfer is that of bureaucracy. The respondent voiced the following opinion:

"They have developed a long trail of paper-work and got that into the system and it will come back three weeks later, and it will come back and say 'write a motivation'." ***[Organisation1_Commercial Manager]***

5.3.2.7 Selfishness

Selfishness is linked to a lot of negative knowledge transfer attributes such as knowledge hiding and knowledge hoarding. One respondent stated their views as follows:

"Because at the end of the day I could be asked to share whatever it is that I know with whoever, and from a selfish perspective I would be shallow minded

and say 'it has taken me twenty years to learn this and come up with all these tricks and now I have to hand them over to this oke [guy] in a week!'" ***[Organisation1_Commercial Manager]***

5.4 Research Question 2: What organisational values promote technical knowledge transfer but impede non-technical knowledge transfer?

While three respondents felt that there was a difference between the values that promote technical and non-technical knowledge transfer, the majority (seven out of the twelve respondents) stated that they believed that there was no difference in organisational values.

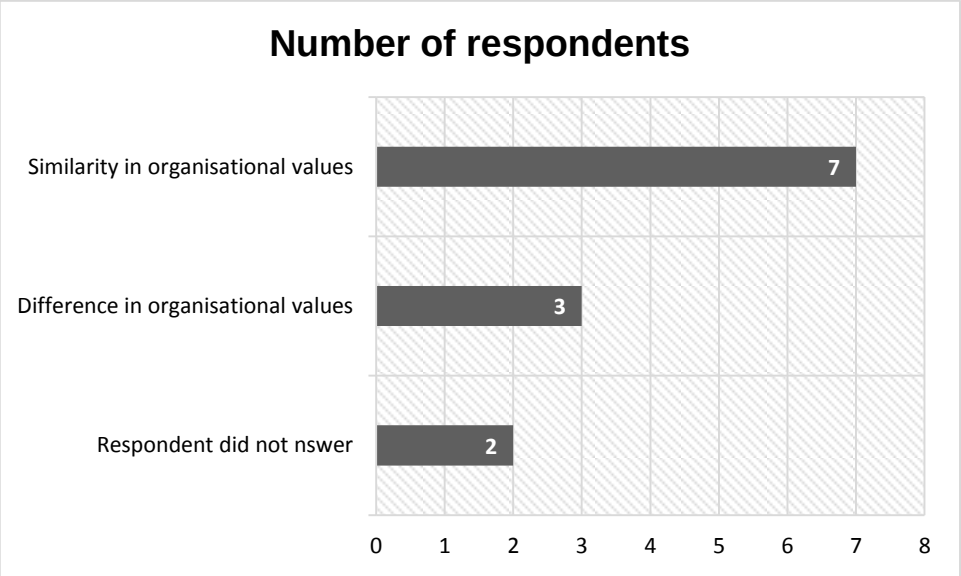

Figure 3: Respondents' views on organisational values that drive technical and non-technical knowledge transfer

5.4.1 Similar values promote both technical and non-technical knowledge transfer

Six of the respondents stated that they believed that similar values promoted both technical and non-technical knowledge transfer. The reasons cited varied

however, the dominant opinion centered around the fact that organizational values had no bearing on the subject or type of skills being transferred. They emphasized that the more important consideration was whether or not the organisation is willing to engage in the knowledge transfer process as expressed in the views below:

"And I don't think there's a difference in the topic itself or whether it is technical or commercial or anything else, you just have to have a willingness to work together towards achieving skills transfer." ***[Organisation3_Contracts Manager]***

"…it is not a different scenario, it is only the skills that are being passed on which are different." ***[Organisation7_Project Manager]***

Other opinions include the following:

Interestingly, one of the respondents stated that he did not believe that knowledge transfer necessarily had any correlation with organisational values as expressed below:

"I don't think knowledge transfer has a strong correlation to an organisation's values." ***[Organisation3_Commercial Manager]***

5.4.2 Different values promote technical and non-technical knowledge transfer

Of the twelve respondents, three of them felt that there was a different set of organisational values that promoted technical and non-technical knowledge transfer. These are values that vary based on the knowledge context, and are therefore referred to as "Context Specific Organisational Values". These are listed in table 5 below.

Table 5: Context specific organisational values

Values driving technical knowledge transfer	Values driving non-technical knowledge transfer
Adaptability	Predictability
Experience	Relationship
Hard-work	Ethics
Mentorship	Fairness
Loyalty	Equity
Long term orientation	Trust
	Decision making
	Performance
	Social responsibility

5.4.2.1 Values that promote technical knowledge transfer

Table 5 identifies the organisational values that the three respondents believed promoted technical knowledge transfer in strategic alliances. These included adaptability, experience, hard-work, mentorship, loyalty and long term orientation.

5.4.2.2 Values that promote non-technical knowledge transfer

A different set of organisational values were indicated as driving non-technical knowledge transfer such as predictability, relationship, ethics, fairness, equity, trust, decision making, performance, social responsibility. The values of ethics, fairness, equity and social responsibility all indicate an obligation to up-hold certain principles, and it would appear that that's a burden that predominantly emphasised in the context of non-technical knowledge transfer.

5.4.2.3 Values that promote technical knowledge transfer but impede non-technical knowledge transfer

Two out of the three respondents felt that the technical context is promoted by the organisational value of adaptability, whilst the non-technical context which is characterised by being very process driven, is promoted by the organisational value of predictability. The respondents' opinions are expressed below:

Adaptability

"…from an operational point of view it is way different because your location changes all the time, and you are working with different sets of people all the time." ***[Organisation1_Commercial Manager]***

"Every day is not exactly the same. You work with very swirl conditions, varying conditions. So it's not as if you can train a guy, if you do it this way, no matter what happens, you're going to always do it this way….you need to be able to adapt to whatever situation you get" ***[Organisation2_Contracts Manager]***

Predictability

"So your process is sort of constant. Climate is also constant, when I say climate I am talking about the people that are around you as well." ***[Organisation1: Commercial Manager]***

5.4.3 No response to question

Two of twelve respondents did not answer the question posed. **Organisation5_Engineering Manager**, stated that he felt that the answer was highly dependent on *"the company that one works for",* whereas respondent **Organisation6_Contracts Manager** found it a *"hard question to answer."*

5.5 Research Question 3: How can tensions created between conflicting organisational values identified in Research Question 2 be better managed in order to ensure successful transfer of both technical and non-technical knowledge?

The responses from the twelve respondents interviewed are classified into the mechanisms to manage tensions pre and post alliance formation. The four broad themes that emerged are presented in table 6 below.

Table 6: Mechanisms to manage conflicting organisational values in strategic alliances

Management of tensions pre-alliance formation	Management of tensions post-alliance formation
Alliance partner selection	Expedient resolution of conflict
Model for knowledge transfer	
Shared goals/vision	

The respondents stated that whether tensions/conflicts were due to differences in values or otherwise, they had a very detrimental impact on the completion of the project. Some of the views expressed are cited below:

"A lack of transfer whether information or skill or knowledge negatively has a huge impact which can snowball and it can have a long term effect. It can basically sink a project if you leave it." ***[Organisation2_Site Manager]***

"Conflict arises constantly…most of the conflict arises out of different values, that might be one way to put it, but different goals. So if the teacher and the student have a different goal in mind it's quite likely that there's going to be conflict." ***[Organisation3_Project Manager]***

"I don't think I've ever completed a project where there haven't been any claims whether money or extensions of time. I think the best part is to follow procedure. There is a nice prescribed procedure to follow if there's something that you are not happy with. You just follow the procedures and nine out of ten times it gets resolved" ***[Organisation2_Site Manager]***

"…the maturity of the people in the organisations plays a big role. I have instances where things were starting to go wrong but our people managed to pacify, calm the situation and bring it to common ground." ***[Organisation1_Commercial Manager]***

These responses indicate that although conflict seems to be a regular occurrence in alliance projects, there some mechanisms that have been put in place to manage them in order to ensure that the knowledge transfer process is not compromised. Some of these mechanisms are discussed in the respondent's views below:

Alliance partner selection

"…we need to tighten up on our selection criteria. Both selection in terms of the mentoring company – the company that's supposed to transfer the skills. And the company that's supposed to receive the skills. Because somehow you need to find a way where, you can minimise the impact of things which are not related to the project but somehow affect the project." ***[Organisation4_Engineering Manager]***

Model for knowledge transfer

"...picking the right individuals and getting them to shadow these guys that have contracts and experience and the knowledge." ***[Organisation1_Commercial Manager]***

Shared goals/vision

"…the organisational goals have to aligned and if the two organisational goals differ it's going to become very, very difficult so you take a kind of a lean, Commercially driven company like mine where profit is king and you pair it up with a publicly held company that has as much social responsibility, responsibility to effect social change as they do to make a profit and it's going to

be difficult because people aren't focussed on the same things. The organisations are not aligned. That's always going to be difficult." ***[Organisation3_Project Manager]***

Expedient resolution of conflict

"When there's a breakdown [conflict], it requires immediate intervention." ***[Organisation3_Project Manager]***

"So there shouldn't be contractual disputes and when there are, it should be attended to immediately and shouldn't have an effect on the transfer of skills." ***[Organisation6_Contracts Manager]***

The results answer the three Research questions posed in Chapter 3. These findings will be discussed in further detail in the next chapter.

Chapter 6: Discussion of Results

This chapter aims to address the Research Questions posed in Chapter 3 by integrating the Results presented in Chapter 5, with the Literature Review in Chapter 2. The research questions were informed by literature on the subjects of knowledge transfer in strategic alliances, as well as on the impacts of organisational values in the context of knowledge transfer. The data was collected through semi-structured interviews conducted on both technical and non-technical managers of EPCM companies that have been involved in alliance projects. The data was coded using ***ATLAS.ti*** and analysed in order to draw key insights from the respondents that addressed the three key questions posed in Chapter 3. Each of these questions will be addressed based on the outcomes of the responses summarised in Chapter 5.

6.1 Organisational values promoting knowledge transfer in strategic alliances

Research question 1 was aimed at developing a profile of the ideal organisation for transferring as well as receiving knowledge. The results were ranked based on the frequency of responses shown in Table 3, and these revealed that the organisational values that had the most impact on knowledge transfer in strategic alliances were very much aligned to two of the three main factors identified by Meier (2011) and Inkpen (2002) which were characteristics of the alliance partners as well as characteristics of their interaction and relationship. The third factor, characteristic of knowledge, will be addressed as part of Research question 2 in section 6.2 below.

6.1.1 Characteristics of alliance partners

The nature of knowledge transfer in the context of alliance partnerships is such that there is a teaching and a learning organisation. Willingness to learn and willingness to teach were two of the five most frequently cited organisational values that the respondents believed promoted knowledge transfer. Both of these organisational values relate directly to the characteristics of alliance partners.

6.1.1.1 Willingness to learn

Willingness to learn is interchangeable with learning intent, which is often referred to in alliance literature e.g. Yaprak (2011). The research confirmed that in order for knowledge transfer to place between alliance partners, the learning organisation had be able to identify the knowledge gaps internally, and value growth and professional development. The organisations where knowledge transfer had taken place successfully had been ones that had deliberately created an environment that was conducive for the transfer process to take place. These organisations had ensured that they created a safe enough space for individuals to be able to openly admit what they did not know, be able to ask questions and make mistakes without fear of being stereotyped, victimised or of potentially losing their jobs. In addition, successful organisations were able to identify individuals that were interested in participating in the process and that also provided opportunities for career progress linked directly to the outcomes of the knowledge transfer initiatives. *"You need to find individuals that have the desire to progress their careers through knowledge and not through politics."* ***[Organisation3_Commercial Manager]***

The study also found that organisations that had leadership that was committed to the knowledge transfer process, and invariably provided adequate resources, were found to have a willingness to learn. Resources in the context of the construction industry referred to infrastructure/equipment, time and money. This is in-line with Meier, (2011) and Simonin's (2004) findings that the learning intent of an organisation is manifested by top management's commitment to deploy resources towards achieving knowledge management goals, as stated in the following quotations below:

"There are two main elements which I can say contribute to hindering the effective implementation of those [sic] skills transfer: one of them is organisations not providing resources to get that skills transfer." ***[Organisation7_Project Manager]***

"There are positive and negative experiences in sub-contracting. One of the negatives are that some of the contractors are really small and they have no infrastructure, they don't have assets, so for them to do the work in our type of industry you need some equipment and so some don't have [equipment] and some have it but it is in a poor state and we have in the past given them assistance…." ***[Organisation2_Managing Director]***

"Anytime you start trying to achieve things other than the physical plant in the field, that just starts to drive up the job costs. So the company needs to understand that value and appreciate that value and be willing to pay for it." ***[Orgnaisation3_Project Manager]***

6.1.1.2 Willingness to transfer knowledge

The second aspect of partner characteristics that was identified in the research findings was willingness to transfer is interchangeable with willingness to teach. As stated by Connelly et al (2012), because organisations do not own the "intellectual assets" of their employees, they cannot force employees to transfer

their knowledge. This implies that the organisations must rely on the genuine buy-in not only of leadership, but of the employees that are supposed to transfer the knowledge on behalf of the transferring/teaching partner.

It was noted that the general perception of knowledge transfer from the perspective of the teaching partner was that it was a hindrance to the delivery of the project, particularly from the larger foreign based multi-national companies represented in the sample. Knowledge transfer was viewed as one of the unfortunate burdens of doing business in emerging economies. One of the respondents emphasized the point that as construction companies, they generally do not view knowledge transfer as part of their core business. Another respondent expressed that their priority is always to execute on the project, and execution is vastly different from teaching. *"…you have to remember that the organisation….is not designed to be a training organisation. It's not designed as an organisation built to deliver skills and knowledge transfer; but it's built to execute jobs."* ***[Organisation3_Project Manager]***

An interesting observation that came out quite strongly from the responses was the amount of value placed on experience within the industry. This organisational value was one of the five most frequently cited by the respondents. There is still a view that teaching partners (and individuals within those organisations), need to have "spent time on the field" and "got their boots dirty". This in itself seems to be a cause of conflict between alliance partners. For example respondent **Organisation3_Project Manager** felt that that their alliance partners put more emphasis on degrees and certificates i.e. learning in a formal classroom setting, as opposed to on-the-job training and experience.

The paradox of what kind of knowledge and how much of it to transfer to alliance partners, especially with the threat of them potentially becoming the organisation's direct competition is also a theme that emerged from the study. This is because of the specialised nature of the industry, there is intense

competition not only for projects but also for suitably qualified skills. Organisations are often reluctant to overly invest time and resources in training and up-skilling individuals because of the high risk of losing those individuals to other organisations as suggested by the following:

"It's a competitive market, once people see that you have good people they will want to take them from you…" ***[Organisation8_Engineering Manager]***

In addition, individuals within organisations fear that sharing their knowledge will put them at risk of being redundant and potentially losing their jobs as indicated by the same respondent's statement below:

"There is this perception that 'this day you train them and tomorrow they are your bosses.'" ***[Organisation8_Engineering Manager]***

On the issue of competition for projects, one of the respondents expressed the following opinion:

"The other [thing] I see as contributing factor is the reluctance or fear of contractors or consultants to actually do that skills transfer or knowledge, to an organisation because it is their competitive edge as well. So if they give their knowledge to you guys [client], there is a fear their company is going to die or be non-existent" ***[Organisation7_Project Manager]***

The research findings above, on the link between willingness to transfer knowledge and competition, offer a contrary view to Simonin's (2004) study which found that learning intent had the same direct impact on knowledge transfer regardless of whether the organisations were paired with strong competitors or with non-competitors. This is because Simonin's (2004) research links competition with learning intent (also referred to as willingness to learn), implying that this was a factor from the perspective of the learning organisation,

whereas in this current study, competition was found to be linked with the teaching company.

Competition is closely related to knowledge hiding and hoarding behavior as described by a number of researchers such as Squire *et al* (2009), Connelly et al (2012) and Alavi et al (2006). The research found that often in the transferring organisation the reality is that individuals will deliberately hold back some information because they feel that it is unfair to and for them to pass on skills that took them a long time to acquire to another person in a short period of time e.g. as expressed by respondent **Organisation1_Commercial Manager**. In order to mitigate this risk, the teaching partners will attempt to look for small sub-contractors which they can assign very menial work to, or more established ones which they can allocate a portion of work to and not have to teach or transfer any skills to. Both these approaches negate the intentions of knowledge transfer.

6.1.2 Characteristics of partner interaction and relationship

The next three organisational values that make up the top five most frequently mentioned values are those of relationship, trust and quality focus, which in-turn influence how alliance partners interact.

6.1.2.1 Relationship

Based on the interview responses, the organisational value of relationship is discussed in the two themes of cultural difference and formality or informality of the environment.

6.1.2.1.1 Cultural difference

The study found that a critical ingredient for successful knowledge transfer was to ensure that both alliance partners appreciated cultural differences and diversity. Respondent **Organisation3_Project Manager** highlighted the fact that, typically, organisations are not adequately prepared from a cultural awareness perspective to handle cultural difference and how these may influence the extent of the knowledge transfer process. An example was given in which a provincial company will find it hard to engage and transfer knowledge to another company.

This finding, in-line with Meier (2011), had alluded to the fact that how organisations overcome cultural diversity/cultural difference is an important dimension that influences the relationship between alliance partners. In addition, Boh *et al*'s (2013) study looked at how individual's openness to diversity impacted on the extent to which knowledge was effectively transferred and found that individuals who were more open to a multi-cultural workforce were able to learn and obtain knowledge more effectively. The previous studies, cited above, show the links of cultural diversity to relationship between alliance partners, and that of cultural diversity to knowledge transfer, respectively. This supports the finding from the current study that cultural diversity, relationship between alliance partners and knowledge transfer are closely linked.

6.1.2.1.2 Formal versus informal teaching environments

Oxley and Wada (2009) found that informal learning behaviour is important particularly for tacit knowledge transfer. The issue of knowledge tacitness will be discussed further in Section 6.2.1. In terms of the type of learning environment that fosters relationship and ultimately, successful knowledge transfer, the study found that there were two distinct views as illustrated below:

"I think we need to put more formalised systems in place when we appoint sub-contractors to make sure that your understanding and his understanding of what needs to be done [is the same]." ***[Organisation2_Contracts Manager]***

This is in contrast to the view expressed below:

"…the formal process itself gets in the way of transfer, just because it forces people to write things down and put effort into it." ***[Organisation3_Contracts Manager]***

A key concern however that was raised in Oxley and Wada's (2009) study, was the fact that if the knowledge transfer process is unstructured, encouraging such spontaneous interactions may increase the risk of unintended knowledge leakage, e.g. of proprietary information. This is a valid risk, and has in part been the driver of why organisations assessed as part of this study, although engaging in a small degree of informal knowledge transfer, would still have a preference towards a more clearly defined and structured knowledge transfer programme.

Organisations can also choose whether to establish formal or less formal relationships with their alliance partners. According to Stanek (2004), formal relationships are often replaced by personal (informal) relationships and there is less dependence on legal contracts. As much as this state would be ideal, the nature of the current landscape in the construction industry has not as yet reached the maturity level where knowledge transfer can be informal and a subconscious "way we do business". This explains why the respondents all expressed a need for more specific and measurable targets to be established up-front and documented within the contract agreement.

6.1.2.2 Trust

Trust is probably the most widely researched aspect of knowledge transfer in strategic alliances such as Boh *et al* (2013), Mueller (2012), Robson et al (2008) and Inkpen & Currall (2004). Trust in the context of the construction industry is linked to trusting that the sub-contractor will execute their portion of the work in time and without compromising quality. One of the respondent's views is expressed below:

"So we have contractors that we really trust and we have come a long with [in terms of knowledge transfer], but [they] still don't have the skills to independently perform. So [the past partnership] it makes it a bit easier because we know the guy [contractor], we know his willingness and we know his short-comings, so we assist in that from day 1." ***[Organisation2_ Managing Director]***

Trust between organisations requires sufficient time to develop, which is why contract duration becomes an important variable in the context of knowledge transfer. In longer term contracts (longer than three years), the knowledge transfer targets should be set slightly higher than in shorter term contracts. This is affirmed by the opinion below:

"…what prevents the transfer of skills is first of all the duration of our contracts, of the work available, and then the fact that we have to leave that guy in his village or wherever we find him; we are not allowed to take him with - and it is not that we are not allowed to take him with, we are forced when we get to the next site to employ the same person from the next area, so we never get the opportunity to work long enough with person for him to show potential." ***[Organisation6_Contracts Manager]***

Trust reduces opportunistic behaviour and uncertainty in inter-firm relationships such as strategic alliances (Stanek, 2004). Buckley et al (2009) also found that "trust stabilises the relationship between partners, reduces need to specify and

monitor contracts, permits open exchange of information and reduces uncertainty and transaction costs." The study found that although there was a clear understanding of trust as an antecedent of knowledge transfer in strategic alliances, the levels of trust were found to be very low. Evidence can be found in which the respondents stated that the contract was used as a mechanism to enforce knowledge transfer. This is primarily due to the fact that the teaching partners often had learning partners imposed on them by the contractual construct, or alternatively because the projects were too short and each new project in a new area brought with it a new learning partner. The complication arises when the clauses relating to knowledge transfer in the contracts are vague, and there are no real targets set resulting in measurement becoming a big challenge.

6.1.2.3 Quality focused

The last organisational value discussed is that of quality focus. It was clear from the responses that the very nature of the construction industry lends itself to having a special focus on quality due the requirement of regulatory compliance. As stated by respondent **Organisation2_Contracts Manager**, failure to adhere to quality standards could have sever relationship as well as reputational implications. It is therefore imperative that alliance partners agree to adhere to a common set of quality standards in order to ensure relationship longevity.

Other organisational values typically linked to relationship and the creation of a knowledge culture such as sharing, openness and collaboration (Mueller, 2012), were not mentioned as frequently as was expected in the research. This could be due to the emerging market context whereby the process of knowledge transfer is seldom voluntary, but imposed on organisations in an attempt by the current government to progress the interests of emerging companies owned by the previously disadvantaged, black majority. This basis alone makes knowledge transfer appear to be a "grudge purchase", an unsolicited consequence of doing business with the government and public sector in

general, which are currently significant investors in capital infrastructure projects.

This has resulted in an overwhelming emphasis on “willingness” and “relationship” both of which indicate a desire for a more relationship based transactions with government, whereby the knowledge transfer requirements are jointly developed, as opposed to the more transactional relationships that characterise the industry.

6.1.3 Organisational characteristics that impede knowledge transfer

The organisational values identified in Table 4 of Section 5.3.2, are to a large degree the negative of the organisational values that were found to promote knowledge transfer. More importantly however, as discussed by Mueller (2012), was to establish how these values manifest themselves in organisations.

The research revealed that some of the organisations that the respondents represented, or their alliance partners thereof, demonstrated some of the negative organisational values which have ultimately impacted the speed and extent of knowledge transfer between the two parties. An example of this would be the fact that respondents indicated that they felt knowledge transfer was eating into their time to execute on the project, indicating a lack of patience. There was also a tendency to view the knowledge transfer process in terms of benefits (or lack thereof) from their own perspective as the teaching organisation, indicating a degree of selfishness. It is critical that organisations are able to identify such organisational values within and/or creeping in order to address them, so that the knowledge transfer process is not compromised.

6.2 Organisational values that promote technical knowledge transfer but impede non-technical knowledge transfer

Research question 2 aimed to assess if knowledge transfer was influenced by knowledge characteristics such as knowledge context (in this research a comparison was made between technical and non-technical knowledge). If so, if there were two distinct and/or contradictory sets of organisational values that drove knowledge transfer in both contexts.

6.2.1 Characteristics of knowledge

The characteristics of knowledge refers to whether knowledge is explicit or tacit. In the context of this study a comparison was derived between the organisational values that promote technical and non-technical knowledge transfer. Both types of knowledge are present in construction companies, however the answer to which of the two was perceived as more strategic yielded varied opinions as seen in the responses in Section 5.4. One of the respondents for example stated that the organisation that he worked for preferred that their employees have experience in both technical and non-technical contexts.

As highlighted by Simonin (2004) and Meier (2011) the degree of tacitness determines the ease of knowledge transfer. The results revealed that because both technical and non-technical knowledge have a degree of both tacitness and implicitness, generally the same organisational values will apply to both types of knowledge. The study did not attempt to establish or compare the levels of tacitness in technical knowledge and in non-technical knowledge. This can largely be attributed to the constantly changing environment and the need for adaptability (which will be discussed in further detail in Section 6.2.2.

The study showed that there are mixed views on whether there is indeed a different set of values that drive technical knowledge transfer compared to those that drive non-technical knowledge transfer in the context of the construction industry. Three respondents agreed with this notion, and although this may appear to be the opinion of a minority i.e. three of the twelve respondents, the results will be utilised since the study is exploratory in nature. The respondents that believed there was a difference emphasised that values like ethics, fairness and relationship often drove non-technical knowledge transfer, whereas values such as mentorship, adaptability, experience and long term orientation drove technical knowledge transfer.

Non-technical knowledge transfer is often linked with legal, commercial and finance aspects of the project. These, despite appearing as non-core competencies at face value, ultimately drive who, how and for how much organisations can engage on a contractual basis. It is for this reason that ethics, fairness and relationship play a major role in the transfer of non-technical knowledge. Added to that is the fact that the construction industry in some emerging economies has recently been marred by cases of collusion, such that these values have become even more critical.

The study affirms the global deficit of technical skills as stated by Kim *et al* (2014). The values that were stated as driving technical specific knowledge transfer all centre around creating a sustainable pool of suitably qualified engineers, project managers, site and construction staff into the future. These included organisational values such as adaptability, experience, hard-work, mentorship, loyalty and long term orientation as shown in Table 5. The respondents highlighted that their organisations were increasingly beginning to realise that this type of technical expertise is a source of growing competitive advantage (Rothwell, 2011). For this reason, there is a more deliberate attempt to ensure that the skills that the older employees have established over time are not lost when they reach retirement age and leave the companies. It for this reason that mentorship and long term orientation in particular are viewed as

being important values that the organisation has to possess in order to effectively engage in and carry out technical knowledge transfer.

Loyalty was regarded as being important organisational value in the context of technical knowledge transfer. Loyalty refers to prior ties, relationships from before the alliance was established between partners (Meier, 2011). These relationships are viewed as being very important as main contractors would prefer to sub-contract to an organisation that they have worked with well previously and built a good relationship with as highlighted below:

"To us loyalty is really important, because that is where you build up a relationship; we have long term relations." ***[Organisation2_Managing Director]***

The respondents that believed that there was no difference in the values that drive both types of knowledge, stated that this was because the values that promote knowledge transfer (discussed above) should be the same for both technical and non-technical knowledge. They believed that the type of knowledge itself had very little influence on the organisation's overall ability and/or desire to transfer knowledge.

6.2.2 Organisational values that promote technical knowledge but impede non-technical transfer

The essence of Research question 2 was to identify if there were any organisational values that drive or promote technical knowledge transfer and impede non-technical knowledge transfer and/or vice versa.

The study found that a small majority of respondents (seven out of the twelve) felt that there was no difference is the organisational values that drive either type of knowledge transfer. From the three respondents that responded positively to this question, adaptability and predictability were identified as contradictory organisational values. This observation emanated from the fact that technical environments are very dynamic, the challenges faced there are different every day and require that the organisation be equipped with the skills through knowledge transfer, to handle these changes. Hence the requirement for the organisation to be adaptable. Non-technical environments on the other hand are perceived as being very process driven, hence the need for predictability.

It is clear that if a single organisation is going to have to have both these seemingly conflicting organisational values, a mechanism will need to be put in place to ensure that there is no internal disputes within the organisation to allow for the facilitation of both technical and non-technical knowledge transfer. The detail of how this can be done will be discussed as part of the answer to Research question 3 in the next Section 6.3.

6.3 Management of tensions created between conflicting organisational values in order to ensure successful transfer of both technical and non-technical knowledge

Research question 3 aims to establish how organisations are managing conflicts raised by conflicting organisational values to ensure that transfer (of both technical and non-technical) knowledge takes place. The responses are documented in Table 6 of Section 5.5.

Meier (2011) established that conflict between alliance partners contributed to alliance failure, reduced trust between partners and was an impediment to the knowledge transfer process.

The management of conflicting values is a critical component to ensuring that not only knowledge transfer takes place successfully, but also that the project in its entirety is not compromised. Conflicting values can be managed by ensuring careful alliance partner selection, adopting the most appropriate model of knowledge transfer, having shared goals, as well as ensuring that the actual resolution process takes place expediently.

6.3.1 Alliance partner selection

The selection of the right partner is a critical decision that needs to be made at the onset or start of the process. Bearing in mind the organisational characteristics that impede knowledge transfer, a lot of research and analysis should go into the profiling of the most appropriate alliance partner. In the study, the respondents revealed that alliance partners were predominately selected as part of a tender process, where little attention was paid in the evaluation criteria on the suitability of the partner organisation from an organisational size, values and diversity perspective. These findings are aligned to Stanek's (2004) view that complementary fit, where the right fit of similarities and differences between partners is sought. Having the right partner will likely reduce the chance of conflict due to conflicting values.

6.3.2 Model for knowledge transfer

It is clear that there is no "one size fits all" model for knowledge. However, investing the time to assess the most appropriate model would certainly reduce

the likelihood of conflict erupting during the execution of the project. The model that should be adopted for the knowledge transfer process would need to take into account a number of variables such as the expected outcomes, the economic and political context, regulatory and legislative environment, experience and capability of both the teaching as well as the learning organisation, the duration and cost of the project.

Some of the models suggested by the respondents included joint problem solving where the partners co-develop solutions, and job rotation whereby individuals get to understand different roles within the project making them more cognisant of other functions and responsibilities and reducing the chance of conflict.

6.3.3 Shared goals/vision

Having a common goal and shared vision is critical to ensure conflict resolution. Respondents emphasised that having aligned, well communicated and understood goals for the knowledge transfer process would go a long way in curbing the break-out of any conflicts between the two parties. The findings are consistent with previous research that found that tensions can be prevented if alliance partners recognise from the start that that their goals are mismatched (Stanek, 2004).

6.3.4 Expedient resolution of conflict

The research found that managing conflict expediently was critical in alliance partnerships. This is aligned to Mueller's (2012) classification of "conflict avoidance" as being an organisational characteristic that impedes knowledge transfer. The respondents indicated that there are procedures for dispute

resolutions and the majority of conflicts can be addressed using these processes and dissatisfaction with outcomes of these processes can lead to an appeal **[Organisation2_Site Manager].**

The respondents cautioned that alliance partners should always choose carefully which battles to fight because relationships especially in the construction industry are crucial. An altercation over something insignificant could result in the partner being prevented from participating on the next project with the same alliance partner. Respondents indicated that they would typically try to resolve the situation directly with the individual from the other organisation before escalating it. The conflict could be managed by simply changing the individual teacher/learner pairings or removing the areas where the sub-contractor is failing to deliver from their scope of work.

If this fails, the respondents stated that the next step in resolving any conflict would be to schedule a formal meeting with all the relevant stakeholders sitting around the table and trying to reach some sort of compromise, this usually ends up in a negotiation process.

Failure at this stage to reach an amicable resolution would then require obtaining an objective third party to mediate i.e. arbitration.

The last step when all else has failed would be contract termination. This is always the last option because it is not an easy to go due to capital investments already made into the project and time pressure to still complete the project on time. This process is often followed by legal action which is not only lengthy, but also costly. Figure 4 below depicts the process above.

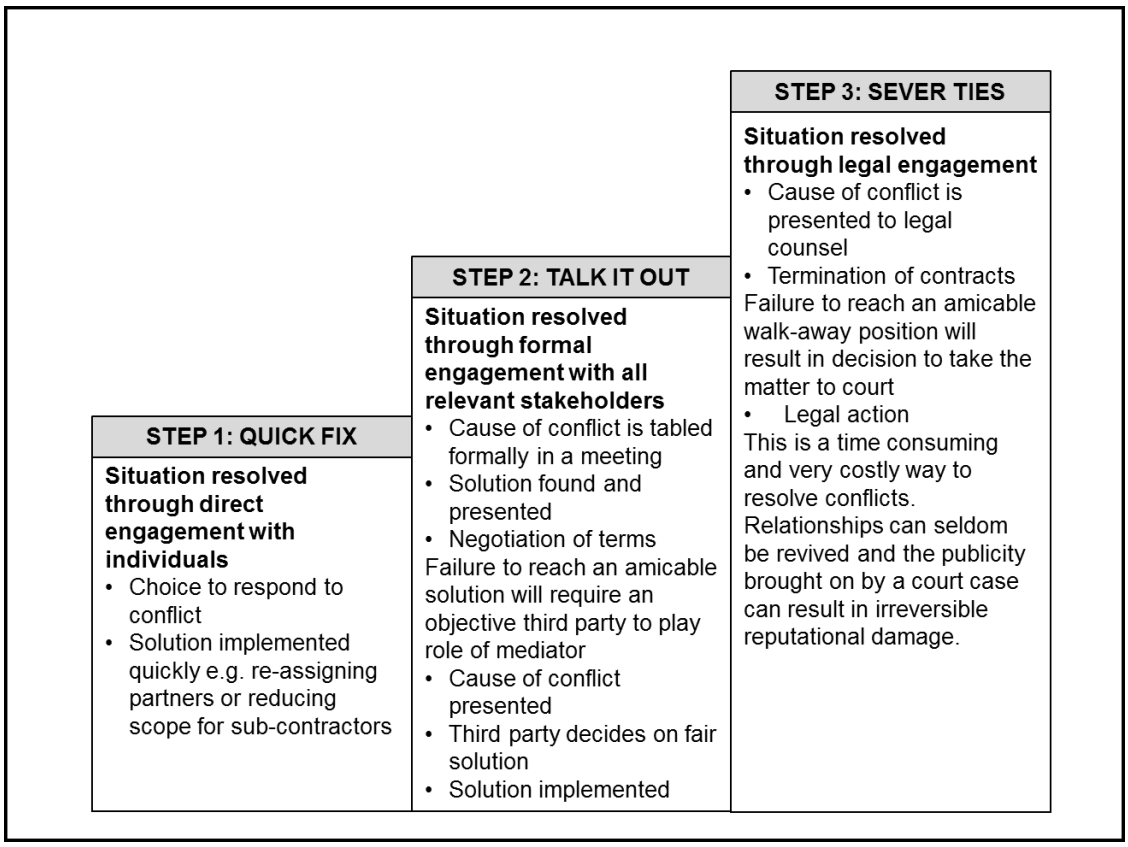

Figure 4: Summary of conflict resolution process

Interestingly one of the respondents stated that disputes over non-technical issues are seen as having a greater impact on project delivery than technical issues, which tend to be more clear-cut, and data driven. Given the knowledge intensive nature of the construction industry, better understanding of the sources of tensions/conflicts and how they can be better managed would ensure that opportunities are not lost due to bad experiences on previous projects.

The issues discussed in this chapter will be utilised to propose recommendations to managers as well as to academics.

Chapter 7: Conclusion

This chapter reviews the research objectives in the context of the findings presented in Chapter 5 and discussed in Chapter 6. The concept of "context specific" organisational values will be defined and a model presented that establishes the relationship between Context Specific Organisational Values and Conflict Resolution Mechanisms. Recommendations based on the research findings are provided and potential areas for future research are identified.

7.1 Research objectives revisited

As presented in Chapter 1, the research sought to determine the organisational values that drove knowledge transfer in strategic alliances. The dimension of knowledge context i.e. whether it is technical or non-technical knowledge, was added and thus resulted in a comparative study of the organisational values that drive knowledge transfer in these contexts. Further to this, the research was conducted to identify any conflicting values that may promote technical knowledge transfer but impede non-technical knowledge transfer (or vice versa). The study also sought to make recommendations and develop a model to address how conflicting organisational values should be managed to ensure successful knowledge transfer in strategic alliances.

7.2 Research findings

The research was in the form of an exploratory qualitative study. The findings were based on the outcomes of twelve semi-structured interviews with managers of EPCM/construction companies. The research findings were also consistent with the literature discussed in Chapter 2, and the insights drawn

from the interview process were used to address the research questions posed in Chapter 3.

The research found that values related to the characteristics of alliance partners i.e. willingness to learn (learning intent) and willingness to transfer knowledge (willingness to teach), were each viewed by seven of the twelve respondents as having the most impact on knowledge transfer in strategic alliances. The results confirmed that in order for knowledge transfer to take place effectively, the learning organisation has to identify its internal knowledge gaps and appoint individuals that are interested in participating in the knowledge transfer process. The learning organisation also needs to create an environment that is conducive for knowledge transfer to take place. This would include availing the necessary resources and providing opportunities for career progression based on the outcome of the knowledge transfer process.

From the perspective of the teaching organisation, the findings showed that the individuals selected to transfer the knowledge must also understand the rationale of the engagement and completely buy into the process for teaching to actually take place. It was found that the teaching partner needed to demonstrate that they have the requisite experience to actually impart knowledge, and have the right attitude towards the knowledge transfer process i.e. not perceive it as a detraction from their core business.

The issue of competition was also a theme observed from the teaching partner perspective. The respondents stated that a concern was always that the teaching company could potentially be creating a strong competitor. In order to avoid this, individuals often resorted knowledge hiding and hoarding behaviours within the alliance.

In terms of the characteristics of partner interaction and relationship, the theme of “trust” as found in most knowledge transfer and alliance literature emerged as a theme in this research. Trust in the context of the construction industry is linked to quality and time, both organisations need to trust that their alliance will be able to deliver good quality work within the set time period. The study also found that there were generally low levels of trust in the context of the construction industry, and this was evidenced by the tendency to enforce contractual obligations as opposed to building trust relationships. For example, in South Africa, knowledge transfer is often imposed on organisations that want to do business with all levels of government, and the public sector in general. The result of this is that alliance partner relationships, be they client/contractor, contractor/sub-contractor or contractor/supplier, tend to be more transactional. It was also established that organisations need to not only be aware of organisational values that promote knowledge transfer, but to also be aware of those that impede knowledge transfer so that they increase the chances of running more successful interventions.

The characteristics of knowledge referred to the tacitness of knowledge. No conclusive evidence could be derived from the study regarding the levels of tacitness in technical compared to non-technical knowledge within the construction industry. The study found that although the majority of organisational values identified by the respondents applied to both technical and non-technical knowledge transfer, there were a set of context specific organisational values (which will be explained in detail in Section 7.3), that uniquely applied to applied either technical or non-technical knowledge.

In the context of technical knowledge, the organisational values included adaptability, experience, mentorship, loyalty and long term orientation. These organisational values are linked to technical knowledge and are all aimed at establishing a sustainable pool of individuals because of the skills shortages associated with the industry as currently being experienced in many emerging economies.

In the context of non-technical knowledge, the organisational values identified were those of predictability, ethics, fairness and relationship.

The organisational values of adaptability and predictability were identified in the study as promoting technical and non-technical knowledge transfer, respectively. These values are conflicting and organisations will need to develop mechanisms to address any tensions created by conflicting values in order to ensure that knowledge transfer continues to take place. For this reason, a number of mechanisms such as careful partner selection, adopting a suitable model for the knowledge transfer process and ensuring that there is alignment of knowledge transfer goals, that can be explored before project execution takes place in order to reduce the likelihood of conflict. Once the project is actually underway, the priority becomes trying get the conflict resolved as quickly as possible in order to minimise any possible losses due to time delays.

A three step process was developed based on inputs from the inputs from the respondents, which can be followed in order to manage conflict.

Step 1: Quick fix

Step 2: Talk it out

Step 3: Sever ties

7.3 Context specific organisational values defined

The research found that although in general the organisational values identified as promoting knowledge transfer in strategic alliances applied to both technical and non-technical contexts. It was established however, that there are a few

"context specific" organisational values that have a greater bearing on the knowledge transfer process in either a technical or on the other extreme of non-technical knowledge. Context specific organizational values will therefore be defined as those values that applicable solely in unique but defined contexts.

Another example of an application of this concept is the fact that for the most part the organisational values that drive knowledge transfer in a profit-making company will be the same as those applicable in a loss-making company. However, there will also be a set of unique, context specific organisational values that will apply on each end of the continuum. These could be autonomy and innovativeness as being organisational values that promote knowledge transfer in the context of a profit-making company, as opposed to sharing and caring as being organisational values that promote knowledge transfer in a loss-making company.

7.4 Proposed model for managing conflict in strategic alliances

The response to Research question 3 raised the need for the development of a model that would simplify the understanding of the conflict resolution mechanism that best suited each situation depending on which organisational value is the cause of the conflict. The model presented in figure 5 below, was developed based on the findings of the study.

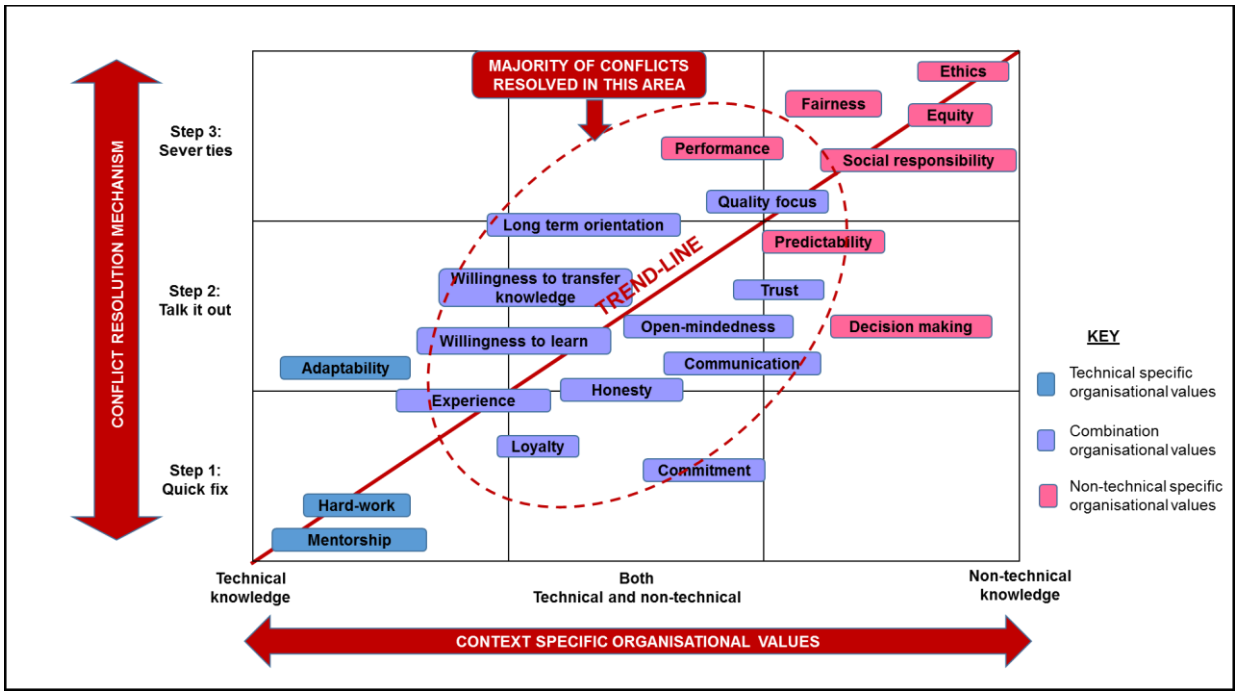

Figure 5: Model showing the relationship between the Conflict Resolution Mechanism and Context Specific Organisational Values

The model is made up of a 3x3 matrix that has the conflict resolution mechanisms discussed in Section 6.3.4 and summarised in figure 4 on the x-axis and the knowledge context on the y-axis.

Therefore if the conflict is due to a technical specific organisational value (shown in blue) such as mentorship, the most ideal mechanism to resolve the conflict would be through a quick fix (i.e. direct engagement).

On the other hand, in the case of a non-technical specific organisational value (shown in pink) such as a conflict in ethics would typically be resolved by severing ties (i.e. legal engagement). It should be noted that the majority of organisational values will apply to both technical and non-technical contexts

(shown in purple), and therefore a conflict in those values will generally be managed by talking it out (i.e. formal engagement).

The list of context specific organisational values contained in the model is not exhaustive, but merely attempts to illustrate how the model works. The context specific organisational values would also need to be amended to align with the knowledge context under review. The model provides quick and easy reference on how to best manage conflict in organisational values.

7.5 Recommendations

Based on the research findings discussed above, the following recommendations can be made:

7.5.1 Recommendations for managers of learning partners

Knowledge transfer in strategic alliances is a complex, time and resource consuming exercise. Before deciding on whether to use this as a mechanism to acquire new knowledge or to upgrade existing knowledge, managers need to ensure that a very rigorous due diligence process has been undertaken.

This can be done by firstly, selecting the right alliance partner that has the same goals and vision for the knowledge transfer process.

Secondly, by encouraging the context specific organisational values that promote alliance learning. This starts with creating a learning-friendly environment that is safe and judgement free, where individuals can admit where they have knowledge gaps or areas for personal and/or career development.

Thirdly, by selecting individuals that a keen to learn and grow to participate in the process.

Lastly, by investing in the necessary resources to facilitate the knowledge e.g. IT, infrastructure and equipment.

Currently very few organisations have invested the time to truly understand how the knowledge transfer process needs to work. Many learning partners view being appointed as a sub-contractor on a large contract as being a way to get another pay-check as opposed viewing it as an opportunity to learn from the best in the business. It is the obligation of the managers of learning partners to understand this first, and then to proactively filter it down to the rest of the organisation.

7.5.2 Recommendations for managers of teaching partners

Playing the role of the teaching partner in an alliance partnership is a big and potentially risky decision. This is because despite having the obligation to transfer knowledge to the alliance partner, the organisation still has an obligation to deliver the project in time, on budget and to a high quality standard. Managers of teaching partners should always weigh these obligations and the realistic threat of possibly developing a viable competitor in the industry, to that of the financial gains that come with being awarded the project.

Similar to the case of learning partners, managers in teaching partners need ensure that they appoint individuals who have a genuine interest in teaching and that have fully bought into the intentions of the knowledge transfer process.

Individuals that show commitment to transferring knowledge should also be acknowledged through incentives, recognition and rewards.

In many emerging countries, knowledge transfer is often viewed as an inconvenience. It must be noted however that such countries are experiencing a significant skills shortage in many industries including construction, managers need to therefore realise that passing on knowledge is an important aspect in growing the skills base of the economy as a whole.

7.5.3 Recommendations for future research

There is still limited research on organisational values in their role in knowledge transfer in the context of strategic alliances, as most research currently focuses on the broader theme of organisational culture. Further research is required to investigate the extent to which organisational values actually influence knowledge transfer.

It would also be interesting to establish if organisations that are effective in transferring knowledge internally are better equipped to transfer knowledge across organisations to their alliance partners.

The research only began to scratch the surface in terms of identifying organisational values that promote knowledge transfer in different knowledge contexts. Further research still needs to be done to assess if the same technical and non-technical specific organisational values that promote knowledge transfer in the construction industry also drive knowledge transfer in other highly technical industries such as manufacturing and mining. If so, whether the same model developed for conflict resolution in figure 5 would still hold.

Lastly, research could also be done to establish whether the context specific organisational values change over time.

7.6 Conclusion

The research findings were able to address the gaps in knowledge identified in Chapter 3. In addition new insights were drawn from the context of the construction industry. It is clear that knowledge transfer is still not well understood, or defined even in instances where it is applied. It is the responsibility of management to ensure that the decision to participate in a knowledge transfer process is made in the context of all the complexities explored in this study.

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Reference List

Appendix A: Consistency Matrix

The impact of organisational values on the transfer of technical and non-technical knowledge in strategic alliances: A comparative study

QUESTIONS	LITERATURE REVIEW	DATA COLLECTION TOOL	ANALYSIS
1. Which organisational values promote knowledge transfer in strategic alliances?	Mueller (2012) Schein (1985) Alavi, Kayworth & Leidner (2006) Van Wijk, Jansen and Lyles (2008) Inkpen & Currall, (2004) Inkpen (2002) Gupta & Govindarajan (2000) Van Burg, Berends and Van Raaij (2013) Stanek (2004) Meier (2011)	Depth interviews	Identification of recurrent themes from grouped text. Atlas TI

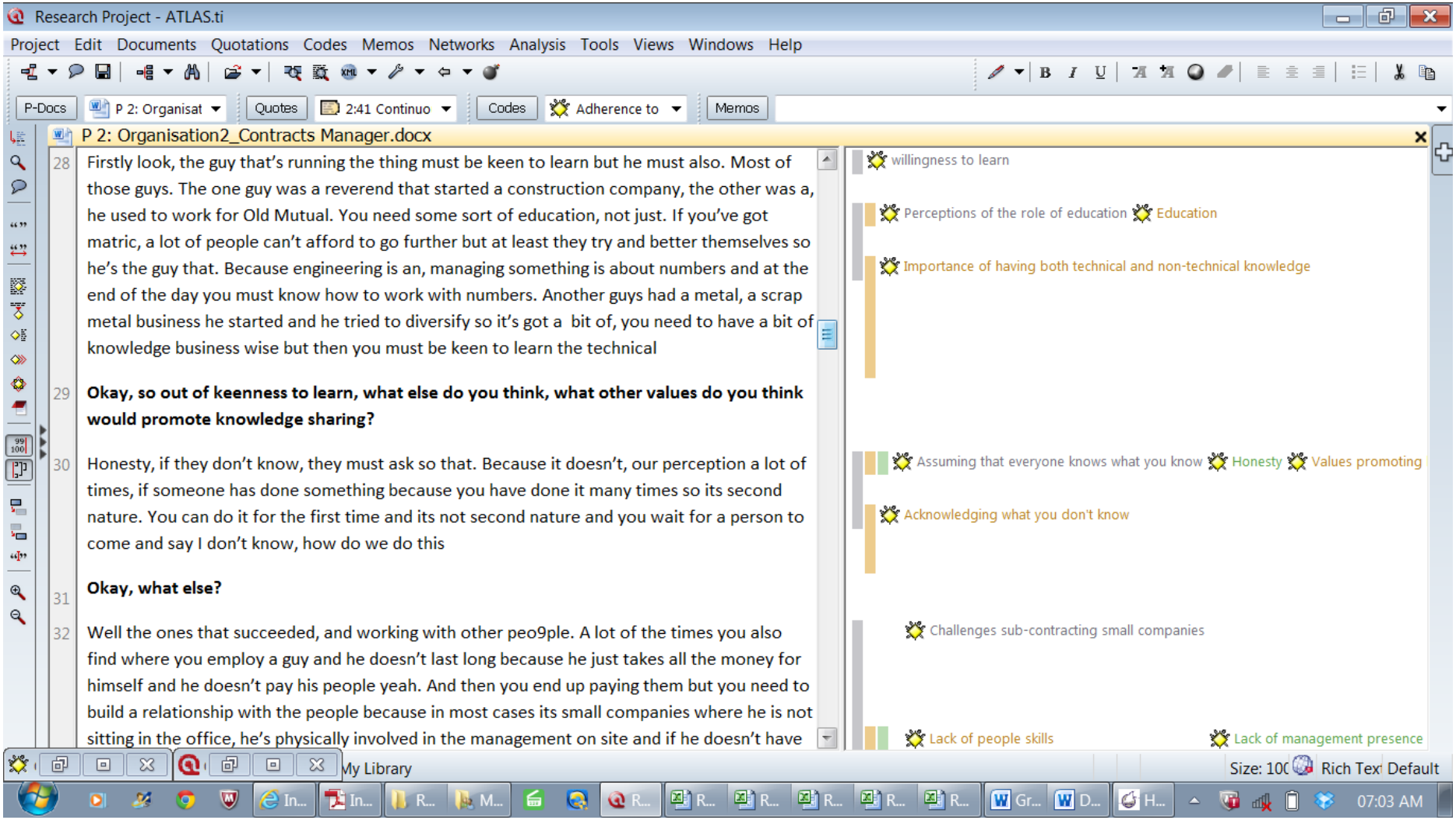
2. What organisational values promote technical knowledge transfer but impede non-technical knowledge transfer?	Mueller (2012) Rothwell, 2011 Van Burg, Berends and Van Raaij (2013) Kim, Williams, Rothwell & Penalozane (2014)	Depth interviews	Identification of recurrent themes from grouped text. Atlas TI
3. How can tensions created between conflicting organisational values identified in 2. be better managed in order to ensure successful transfer of both technical and non-technical knowledge?	Alavi, Kayworth & Leidner (2006)	Depth interviews	Identification of recurrent themes from grouped text. Atlas TI

Appendix B: Interview Schedule

The researcher will initiate the discussion with a brief preamble that sets the context for the research. Organisational values will be clearly defined as a subset of organisational culture, and a brief summary of Mueller's (2011) research that proposes a relationship between organisational values and knowledge transfer. A clear distinction will also be made between technical and non-technical knowledge transfer.

1. What is your current role in the organisation?
2. Tell me about the alliance projects that you have worked on?
3. What has been your experience on how knowledge transfer was perceived these projects?
4. Which of your organisational values do you believe play the most important role in the degree of knowledge transfer?
5. In your experience which organisational values (either of your organisation or of your alliance partners) do you believe impede knowledge transfer?
6. What is the difference between how knowledge transfer is perceived in technical contexts in comparison to non-technical/commercial contexts?
7. Which organisational values (either of your organisation or of your alliance partners) do you think promote technical knowledge transfer?
8. Which organisational values (either of your organisation or of your alliance partners) do you think promote non-technical knowledge transfer?
9. In instances where your alliance partner has had different/conflicting organisational values, how has that impacted on the extent of knowledge transfer?
10. How have conflicting values between alliance partners been managed in order to ensure successful knowledge transfer?
11. What is the difference between how these tensions are managed in technical contexts compared to non-technical contexts?
12. Is there anything else that you would like to add before we end?

Appendix C: Screenshot of ATLAS.ti programme



Appendix D: Codes for question 1

Question1a - Organisational values promoting knowledge transfer in strategic alliances

Rank	Organisatiuonal value	P 1: Organ	P 2: Organ	P 3: Organ	P 4: Organ	P 5: Organ	P 6: Organ	P 7: Organ	P 8: Organ	P9: Organ	P10: Orga	P11: Orga	P12: Orga	TOTALS:	NO. of Res
1	Willingness to learn	0	6	4	1	7	6	3	0	4	0	0	0	31	7
2	Willingness to transfer knowledge	0	2	1	1	0	1	2	0	2	0	3	0	13	7
3	Relationship	8	1	2	1	0	0	1	0	0	0	2	1	16	7
4	Trust	0	1	3	2	0	1	1	0	0	0	0	2	10	6
5	Quality focussed	0	3	2	1	0	0	0	0	0	0	2	1	9	5
6	Experience	0	4	0	2	0	0	3	0	0	0	0	4	13	4
7	Commitment	6	0	1	0	0	0	0	0	0	0	1	2	10	4
8	Long term orientation	0	2	4	0	0	0	0	0	0	0	2	1	9	4
9	open-minded	3	0	0	0	0	0	2	0	1	0	0	1	7	4
10	Communication	0	0	0	0	0	1	1	0	3	0	0	1	6	4
11	Willingness to make mistakes	0	2	0	1	1	0	0	0	0	0	0	0	4	3
12	Ethics	2	3	0	0	0	0	0	0	0	0	0	0	5	2
13	Honesty	0	3	0	0	0	0	2	0	0	0	0	0	5	2
14	Accountability	1	0	0	0	3	0	0	0	0	0	0	0	4	2
15	Listening	2	2	0	0	0	0	0	0	0	0	0	0	4	2
16	Loyalty	0	0	3	0	0	0	0	0	0	0	0	1	4	2
17	Respect	2	0	0	0	2	0	0	0	0	0	0	0	4	2
18	Adaptability	2	1	0	0	0	0	0	0	0	0	0	0	3	2
19	Collaboration	1	0	0	0	0	0	0	0	0	0	2	0	3	2
20	Sustainability	0	0	0	0	0	0	2	0	1	0	0	0	3	2

Question 1b: Organisational characteristics impeding knowledge transfer in strategic alliances

	P 1: Organ	P 2: Organ	P 3: Organ	P 4: Organ	P 5: Organ	P 6: Organ	P 7: Organ	P 8: Organ	P9: Organi	P10: Orgai	P11: Orgai	P12: Orgai	TOTALS:	No. of Res
Corruption	0	0	0	0	0	0	0	2	0	0	0	3	5	2
Cultural difference and	0	0	1	0	0	0	4	0	0	0	0	0	5	2
Hard-headed	0	0	0	1	0	0	0	0	1	0	0	0	2	2
Impatience	0	0	0	0	0	0	3	0	0	0	0	0	3	1
Arrogance	2	0	0	0	0	0	0	0	0	0	0	0	2	1
Bureaucrasy	1	0	0	0	0	0	0	0	0	0	0	0	1	1
selfishness	1	0	0	0	0	0	0	0	0	0	0	0	1	1
Stubborness	0	1	0	0	0	0	0	0	0	0	0	0	1	1
TOTALS:	4	1	1	1	0	0	7	2	1	0	0	3	20	