

Graduate School of Business

**Complexity Leadership: A study of Operationalizing Adaptive
Leadership within the Resource Sector**

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Doctor of Business Administration
of
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Declaration

To the best of my knowledge and belief this thesis contains no material previously published by any other person except where due acknowledgment has been made.

This thesis contains no material which has been accepted for the award of any other degree or diploma in any university.

Signature: 

Date: 15/4/2016

TABLE OF CONTENTS

ABSTRACT	I	
DEDICATION	II	
ACKNOWLEDGEMENTS	III	
OPERATIONAL DEFINITIONS	4	
1	CHAPTER ONE: INTRODUCTION	6
1.1	OVERVIEW OF ISSUE.....	6
1.2	BACKGROUND.....	6
1.3	SIGNIFICANCE	14
1.4	COMPLEXITY LEADERSHIP OVERVIEW	15
1.5	RESEARCH QUESTION & OBJECTIVES	16
1.6	KEY FINDINGS.....	16
1.7	THESIS STRUCTURE.....	18
2	CHAPTER TWO: SETTING THE CONTEXT	20
2.1	INTRODUCTION.....	20
2.2	THE RESOURCES SECTOR IN WESTERN AUSTRALIA	20
2.3	THE RESEARCH ORGANISATION	22
2.4	INNOVATION IN THE RESOURCES SECTOR	23
2.5	CHAPTER SUMMARY	26
3	CHAPTER THREE: LITERATURE REVIEW	28
3.1	LITERATURE SEARCH STRATEGY	29
3.2	CYBERNETIC LEADERSHIP.....	31
3.3	DETAILED DISCUSSION BY LITERATURE AREAS.....	32
3.3.1	INDIVIDUAL CHARACTERISTICS.....	33
3.3.1.1	SOCIAL CAPITAL, HUMAN CAPITAL AND INTELLECTUAL CAPITAL .	33
3.3.1.2	DIVERSITY	36
3.3.2	RELATIONAL CHARACTERISTICS	38
3.3.2.1	MANAGED SOCIALISATION	39
3.3.2.2	AGENTIC INTERACTIONS	40
3.3.2.3	COMMUNICATION.....	42
3.3.3	ORGANISATIONAL CHARACTERISTICS	44
3.3.3.1	CULTURE.....	44
3.3.3.2	EMERGENT PROPERTIES	46
3.3.3.3	KNOWLEDGE MANAGEMENT	47
3.3.3.4	ORGANISATIONAL LEARNING	49
3.3.4	ADAPTIVE LEADERSHIP	52
3.3.5	OPPORTUNITIES FOR RESEARCH	55
4	CHAPTER FOUR: RESEARCH METHODOLOGY AND CONTEXT	56
4.1	INTRODUCTION.....	56
4.1.1	PHILOSOPHY AND APPROACH.....	57
4.1.2	STRATEGY	58
4.1.3	TIME HORIZONS	59
4.1.4	TECHNIQUES AND PROCEDURES	59
4.2	PROCESS FOR GAINING ACCESS	64
4.3	ETHICAL ISSUES	66
4.4	DATA COLLECTION	67
4.4.1	ANALYSIS PROCESS.....	69

4.4.1.1.1	OPEN CODING.....	70
4.4.1.1.2	AXIAL CODING	71
4.4.1.1.3	SELECTIVE CODING	72
4.4.1.1.4	REFLEXIVITY	72
4.4.2	SUMMARY	75
5	CHAPTER FIVE: FINDINGS.....	77
5.1	INTRODUCTION.....	77
5.2	HINDERING CREATIVITY AND INNOVATION	80
5.2.1	MOTIVATING ENVIRONMENT	80
5.2.2	LACK OF RECOGNITION	81
5.2.3	NO ACCOUNTABILITY	85
5.2.4	UNDER RESOURCED	86
5.2.5	FEAR AND CONTROL	89
5.2.6	SUMMARY OF ELEMENTS THAT HINDER CREATIVITY AND INNOVATION..	95
5.3	FOSTERING CREATIVITY AND INNOVATION.....	96
5.3.1	COMMUNICATION AND INTERACTIONS	96
5.3.2	ADEQUATELY RESOURCED.....	106
5.3.3	RECOGNITION OF EFFORT.....	113
5.3.4	ENVIRONMENT OF TRUST	117
5.3.5	SUMMARY OF ELEMENTS THAT FOSTER CREATIVITY AND INNOVATION	119
5.4	INTERNAL ENVIRONMENT	120
5.4.1	BECAUSE THEY WERE ACROSS ALL DEPARTMENTS	120
5.4.2	SOMETIMES IT IS A LANGUAGE THING.....	122
5.4.3	ONCE WE'VE DECIDED WHAT OUR IDENTITY	124
5.4.4	WOULDN'T HOLD IT UP AS AN ORGANISATION AS A MODEL	124
5.4.5	THEY DON'T CARE ... THEY WON'T BE AROUND TO SEE THE IMPACT.	128
5.4.6	SUMMARY OF INTERNAL ENVIRONMENT ELEMENT.....	128
5.5	EXTERNAL ENVIRONMENT	129
5.5.1	I'M SUCH A DIFFERENT GENERATION.....	130
5.5.2	I HAVE A VERY FIRM GRASP.....	130
5.5.3	MINING INDUSTRY WAS REALLY BOOMING	130
5.5.4	CONTRACTORS USE IT AS A FOOT IN THE DOOR.....	131
5.5.5	ALWAYS BEING IN DIRT AND HARSH CONDITIONS.....	132
5.5.6	AFTER HOURS IS MORE ABOUT FLAT OUT FLAT OUT	132
5.5.7	SUMMARY OF EXTERNAL ENVIRONMENT ELEMENTS.....	133
5.6	CHAPTER SUMMARY	134
6	CHAPTER SIX: DISCUSSION OF FINDINGS	136
6.1	INTRODUCTION.....	136
6.2	OPERATIONALIZING	137
6.2.1.1	WORKERS	143
6.2.1.2	RIGHT PEOPLE.....	144
6.2.1.3	SHARING	147
6.2.1.4	FUNCTIONAL PARTICIPATION.....	147
6.2.1.5	TACIT KNOWLEDGE	149
6.2.1.6	EMERGENCE.....	152
6.2.1.7	PROCESS.....	153
6.2.1.8	ORGANISATIONAL RESOURCES	154
6.2.1.9	UTILISING RESOURCES	154
6.2.1.10	CONSULT AND ENGAGE.....	156

6.2.1.11	TAKEN FOR GRANTED	157
6.2.1.12	RECEPTIVE AND SUPPORTIVE	158
6.2.1.13	RISK	159
6.2.1.14	AWARENESS	160
6.2.1.15	EMPOWERMENT	161
6.2.1.16	RESPECT	161
6.2.1.17	FEAR	164
6.2.1.18	INNOVATION	165
6.3	INTERACTIONS	166
6.3.1.1	RELATIONAL CAPITAL	170
6.3.1.2	THIN COMMUNICATION	170
6.3.1.3	NETWORKS	171
6.3.1.4	GENERATIVE RELATIONSHIPS	172
6.3.1.5	TEAM	174
6.3.1.6	TENURE	175
6.3.1.7	ESSENTIALISM	176
6.3.1.8	ATTRACTORS	177
6.3.1.9	STRUCTURE	179
6.3.1.10	LEADERSHIP ENABLERS	179
6.3.1.11	COMMUNICATION	180
6.3.1.12	OPENNESS	180
6.3.1.13	ENCOURAGEMENT	181
6.3.1.14	ADAPTIVE LEADERSHIP	182
6.3.1.15	IDENTITY AND TENSION	183
6.3.1.16	RESONATE	183
6.4	SOCIAL CAPITAL	185
6.4.1.1	MESO	186
6.4.1.2	MACRO	188
6.5	CHAPTER SUMMARY	190
7	CHAPTER SEVEN: CONCLUSION & RECOMMENDATIONS	194
7.1	CONTRIBUTION TO THEORY	194
7.2	CONTRIBUTION TO PRACTICE	197
7.3	LIMITATIONS	198
7.4	FUTURE RESEARCH	200
7.5	FINAL REFLECTIONS	200
	REFERENCES	202

LIST OF APPENDICES

APPENDIX 1: CODING METHODOLOGY	245
APPENDIX 2: SUMMARISED EMERGENT THEMES	246
APPENDIX 3: EMERGENT THEMES	247
APPENDIX 4: INTERVIEW QUESTIONNAIRE	248
APPENDIX 5: INFORMATION SHEET	250
APPENDIX 6: INFORMED CONSENT	252

LIST OF TABLES

TABLE 1.1: SKILLED VACANCIES BY SELECTED OCCUPATION GROUP	9
TABLE 1.2: GLOBAL PRODUCTION	13
TABLE 1.3: NET OVERSEAS MIGRATION	14
TABLE 2.1: ORGANISATIONS OPERATING IN THE AUSTRALIAN RESOURCES SECTOR....	21
TABLE 3.1: LITERATURE SEARCH STRATEGY	29
TABLE 3.2: LITERATURE GAPS USING ADAPTIVE LEADERSHIP AND CREATIVITY	30
TABLE 3.3: LITERATURE GAPS USING ADAPTIVE LEADERSHIP AND INNOVATION.....	31
TABLE 4.1: PARTICIPANT PROFILE	68

LIST OF FIGURES

FIGURE 1.1: THESIS STRUCTURE	19
FIGURE 2.1: MINE LIFE CYCLE CURVE	25
FIGURE 2.2: MINE LIFE CYCLE STAGES	27
FIGURE 3.1: LITERATURE REVIEW FRAMEWORK.....	28
FIGURE 4.1: RESEARCH METHODOLOGY	57
FIGURE 4.2: THE RESEARCH DESIGN.....	63
FIGURE 4.3: ELEMENTS OF RIGOUR.....	76
FIGURE 5.1: CREATIVITY AND INNOVATION: RELATIONSHIPS BETWEEN KEY AREAS OF DATA	78
FIGURE 5.2: ELEMENTS HINDERING CREATIVITY AND INNOVATION.....	80
FIGURE 5.3: ELEMENTS FOSTERING CREATIVITY AND INNOVATION	96
FIGURE 5.4: INTERNAL ENVIRONMENTAL ELEMENTS	120
FIGURE 5.5: EXTERNAL ENVIRONMENTAL ELEMENTS	129
FIGURE 6.1: SUMMARISED THEMES FOR DISCUSSION.....	137
FIGURE 6.2: ORGANISATIONAL TENSION IDENTIFIED	192
FIGURE 6.3: STRUCTURAL SPACE.....	193

Abstract

The aim of this research was to gain a better understanding of potential strategies for operationalizing Adaptive Leadership using Complexity Leadership Theory principles. It was motivated by a perception that leadership has close links with intellectual capital management and consequently on the social capital of organisations within the natural resources sector in Western Australia. This potentially poses significant competitive risk to organisations.

This research focused on the resources sector due to the significance of the sector to the Australian and in particular the Western Australian economy. The sector is characterised by high levels of investment in fixed capital, relatively fixed natural resources, and fluctuating shortages of skilled labour. In this context, there are key challenges and imperatives for leadership strategies that build and retain both intellectual and social capital. Two departments within a single resources organisation participated in this research. Face to face, interviews were conducted to canvas the views and experiences of participants on creativity, innovation, interactions, managed socialisation, as well as leadership within the organisation.

Operationalizing, Interactions and Social Capital are three themes that emerged. These collectively describe the enablers and barriers to creativity and innovation as well as the influence of adaptive leadership within the organisational context. These themes assist in answering the research objectives identified. A model that addresses the need for a structural space is proposed where structural space is seen as the area of creative tension and innovation resulting from the tension generated between maintaining a cybernetic leadership focus against the need to be creative and innovative through an adaptive leadership focus.

This research identified a range of strategies that could potentially be beneficial to the organisation in this study resulting in creative and innovative solutions thereby leading to sustained competitive and comparative advantage. These include, facilitating and enabling social interactions or managed socialisation, having a common communication language, having independent departments to oversee the collation, analysis, implementation, and reward of creative and innovative ideas, as well as having people with the right skill and attitude.

Dedication

With love and gratitude for my Parents;
Dahyalal (Batuk) Vyas and Shardaben Vyas

||Om Gan Ganpataye Namho Namah||

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Operational Definitions

For the purpose of this research, the following operational definitions are used:

1. Complexity leadership theory addresses the dynamic and adaptive behaviours of complexly interacting, interdependent agents within systems under conditions of internal and external pressures (Marion 2008).
2. Adaptive leadership is an informal leadership process occurring in the interactions of interdependent agents in the process of generating and advancing innovative solutions to adaptive challenges (Heifetz and Laurie 2001).
3. Intellectual capital management is the management of knowledge assets attributed to an organisation, which significantly contribute towards improving its competitive position (Starovic and Marr 2003) and sustainability.
4. Transient or Transient mobile workforce refers to all non-core employees with subcontracting, outsourcing, consulting, part-time, fixed-term, temporary, casual or home employment terms (Horwitz, Chan, and Hesan 2003).
5. Social capital is an asset, which is rooted in the relationships of individuals, communities, networks, or societies (Nahapiet and Ghoshal 1998).
6. Transient Social Capital describes social capital that emanates and flourishes from the use of a Transient or Transient Mobile Workforce within the organisation.
7. A Complex Adaptive System (CAS) is a system comprised of a multitude of persons, components, or nodes; often referred to as agents who interact in order to adapt and learn (Holland 2006).
8. Functional participation refers to behaviour that goes beyond the call of duty in performing one's job for example, by taking on additional duties or volunteering for special projects (Bolino, Turnley, and Bloodgood 2002).

9. External mind describes relationships and interactions with individuals outside the organisation such as but not limited to consultants, contractors, customers, suppliers, and peers, thus facilitating the accumulation of knowledge critical for competitive advantage (Nonaka and Takeuchi 1995).

1 Chapter One: Introduction

1.1 Overview of Issue

This research investigates the process of operationalizing Adaptive Leadership using Complexity Leadership Theory principles. The aim is to contribute to a better understanding of the impact of such strategies on intellectual capital management and consequently on the social capital of organisations within the natural resources sector in Western Australia

Having witnessed considerable frustration and stress that resulted from social capital erosion, poor intellectual capital management practices, and inadequate leadership strategies motivated this research project. This appeared to result in lost opportunities to capitalize on internally generated creativity and innovation particularly when there was a loss of informal interactions amongst organisational agents. Also noted was the impact of voluntary employee turnover on the performance of the organisation particularly the “pied-piper” effect that resulted in teams or groups of employees leaving the organisation (Verma and Pathak 2011, 279; Wysocki Jr 2000, 30). Prior research also acknowledges the impact of knowledge leakage resulting from employee turnover and the subsequent loss of organisational human capital (Massingham 2008).

This study identifies potential gaps in leadership strategies by gaining a better understanding of adaptive leadership using a complexity leadership lens. Identifying and then addressing these gaps can help to create awareness of practices that will lead to a more competitive resources industry. Knowledge and knowledge assets also assist in understanding how and why organisations function and how contextual conditions affect organisations (Hatch and Cunliffe 2013).

1.2 Background

During the first decade of the 2000s, the resources industry experienced a long predicted shortage of workers and skills that were required to perform highly specialised tasks. This was partly fuelled by an ageing population (Phillips 2008; Minerals Council of Australia 2012) and led to an increased dependence on the contribution of knowledge workers that is, workers who have high-level specialised

transferable skills that can be applied to challenges critical to the organisations sustainability (Drucker 2003; Minerals Council of Australia 2015)

Mining of Western Australia's natural resources has been integral to the state's social and economic development. It involves an array of activities, which in official statistics include industry classifications such as Mineral Extraction, Petroleum Extraction, and Services to Mining, Mining Related Manufacturing, Electricity, and Gas (ABS 2002). In 2011, the Minerals Council of Australia predicted that a further 86,000 personnel would be required to boost the then current workforce of 216,000 (Miller 2011). Direct employment in the minerals industry in November 2014 was 208,200 (Minerals Council of Australia 2014) with the resources industry experiencing rapid job growth (Minerals Council of Australia 2015).

The Minerals Council of Australia stated that the resources sector was experiencing a "skills shortage rather than a labour shortage" (Minerals Council of Australia 2012, 2). This is despite the fact that the workforce within the resources sector is well skilled with more than "34 per cent" having attained a tertiary level qualification, with extra training cost incurred by resource organisations through site-based training to minimise production disruption (Minerals Council of Australia 2012, 3). There was an increased reliance on knowledge workers within the Western Australian resources industry in order to meet the demands of a booming sector.

In isolation, the product of a knowledge worker is ineffective as the knowledge worker uses tacit skills and knowledge to provide understanding, generating concepts, and guidance necessary for other highly specialised production and operational tasks (Drucker 2007, 4). The application of tacit skills and knowledge is also at the discretion of the knowledge worker and organisations are therefore increasingly relying on an employee's functional participation or favourable organisational citizenship behaviour in order to operate effectively (Bolino, Turnley, and Bloodgood 2002; Nasser et al 2011).

The effectiveness of a knowledge worker to an organisation lies in their inclination and capability to exploit and integrate their existing personal and organisational knowledge in order to be creative and innovative (Lee-Kelley, Blackman, and Hurst

2007; Linderman, Pesut and Disch 2015). This becomes critical in dynamically changing environments and knowledge intensive industries where creativity and the capability to convert this creativity into marketable innovation is crucial. Organisational agents are vital to driving value creation thereby making culture, organisational values, and vision critical (Alvesson 2012, 8; Collins and Porras 2005, 71).

Continuous improvement and innovation is part of the ongoing work and responsibility of knowledge workers and their individual experience and tacit knowledge as a key asset held by the employees (Drucker 1999). These workers tend to change jobs frequently looking for employability rather than employment (Hiltrop 1995; Presti and Pluviano 2015), and may have substantially different expectations from their employers than other employees. Organisations that recognise knowledge workers as key assets therefore need to implement steps to retain these employees to ensure competitiveness and growth (Lee-Kelley, Blackman, and Hurst 2007). At the same time, knowledge workers have transferrable skills that make them attractive to a range of organisations (Drucker 2003). Aligning and targeting education and training to labour market demands can assist in addressing labour skilled shortages however, this becomes challenging with an ageing population (Phillips 2008, Minerals Council of Australia 2012).

With knowledge management being a long-term investment strategy, a latent tension exists between organisational knowledge management initiatives that compete with dynamic environmental changes (Kalkan 2008). Therefore, understanding an organisations strategic gap that potentially underpins a knowledge gap becomes time critical (Zack 1999). Leaders need the capacity to convert organisational knowledge successfully into a core advantage (Pfeffer and Sutton 2013, 256).

A labour skills shortage also suggests that it is increasingly crucial for an organisation to meet challenges effectively and have appropriate management systems in place. This will ensure that comparative and competitive advantages from internally generated creativity and innovation are effectively utilised.

In increasingly global competitive markets, competitive advantage is at the heart of organisational performance (Barney 1991; Collis and Montgomery 1995; Paulraj 2011; Porter 1985) stemming from the varied value driving and supporting activities performed throughout an organisations value chain (Porter 1985). Competitive advantage that is derived from internal organisational resources and capabilities is potentially also more sustainable than that based solely on product and market positioning (Zack 1999), with long-term corporate value created by effectively managing intangibles (Abhayawansa and Abeysekera 2009). Organisational intangibles include proficiency, experience, trademarks, status, competencies, internal and external connections, and employee innovativeness (Steenkamp and Kashyap 2010). However, intangibles such as creativity and innovation, critical to generating new knowledge, are difficult to measure, being fundamentally unpredictable with uncertain outcomes (Starovic and Marr 2003).

In the mid to late 2000s, because of rapidly growing demand from the Mining industry Western Australia's labour market experienced an excess of demand over the supply of particular categories of skills such as Tradespersons and Professionals (ABS 2006). To a certain extent, the lack population growth, a maturing labour force, as well as reduction in training and learning activities exacerbates this shortage (ABS 2007). Table 1.1 shows changes in skilled vacancies across Australia by selected occupation.

Table 1.1: Skilled Vacancies by Selected Occupation Group

Industry Group ('000s)	Western Australia Statistics Released in November (2009-2014)				2009-2014
	2009	2011	2013	2014	Δ%
Mining (Resources)	4.1	10.3	4.7	3.8	-7.3
Manufacturing	9.8	11.0	6.1	9.6	-2.0
Construction	11.8	13.7	9.9	11.3	-4.2
Transport & Warehousing	5.9	11.2	6.0	4.8	-18.6
Financial & Insurance	10.2	7.4	6.4	7.9	-22.5

Adapted: Australian Bureau of Statistics (2014)

Table 1.1 indicates that demand for skilled workers within the Mining (Resources) sector remained strong from 2009 - 2014 with only 7.3% of total vacancies filled, which also indicates that there is a shortage of the required skills. Downstream

supporting industries also reflect this demand and shortage with vacancies filled in Manufacturing 2%, Construction 4.2%, Transport & Warehousing 18.6%, and Finance & Insurance 22.5%. At the peak of the resources sector boom in 2011 skilled vacancy rates increased as industries across all sectors scrambled to satisfy demand for goods and services. Since 2013 however, vacancy rates have stabilised to 2009 pre-boom activity levels with industries and low-tier resource organisations seeking to ramp down production particularly for iron ore to maintain a steady resource to supply their primary market.

The retention of knowledge workers is also challenging due to an increasing global demand for skills and expertise from other expanding economies (Phillips 2008). Thus, in addition to managing their internal resources including skill shortages and the supply and demand of the resource, organisations face external environmental challenges and uncertainties particularly within the resources sector in Australia. One of these challenges is currency exchange risk resulting from the strengthening and weakening of the Australian dollar against the US dollar. Traditionally, as a commodity currency, the Australian dollar decreases in line with globally falling commodity prices. The weakening of the Australian dollar in 2014 to an average of 90 US cents; this weakening has shielded producers to some extent from a fall in commodity prices (DMP 2014).

Globalisation comprises the “economic, political, socio-cultural, legal, technological, and physical interconnections” that render existing borders and boundaries permeable (Hatch and Cunliffe 2013, 74) potentially resulting in economic wide disruption. The potential impact from such disruption was evident during the 2007-2008 Global Financial Crisis. Globalisation is also seen as the unprecedented compression of time and space resulting from political, economic, and cultural change, and the increasing integration of social and cultural norms (Higgins and Debroux, 2009; Steger 2005).

Managing intellectual capital becomes even more challenging and intricate within corporations that operate and interconnect at a global level (Kalkan 2008) with challenges relating to cultural complexity, human resources, organisational structures, and increased competition (Fahey and Prusak 1998; Herbane, Elliot, and

Swartz 1996; Staber and Sydow 2002). Interconnections between these corporations in an environment of extended global supply chains is crucial where the power balance between corporations and the communities they serve is increasingly leaning towards favouring the corporation.

Within the resources sector, increasing shareholder and stakeholder expectations for organisations to be socially responsible mounts external pressure for organisations to support local communities and industries. This is often referred to as the organisations “social licence” to operate (Canadian International Council 2014, 67) or the triple bottom line approach (Slaper and Hall 2011), with a need for corporations to consider and respond to issues beyond their minimum economic, technical, and legal requirements (Kumar and Tiwari 2010).

Firms operating in multiple countries correspondingly have substantial challenges in administering strategies across the different cultures and business practices potentially exposing such firms to inconsistent information between stated policies and actual behaviour (Wagner, Lutz, and Weitz 2009). Ethical behaviour is a vital characteristic of corporate social responsibility indicating that an organisation is serious about doing the right thing by avoiding harm or injury to stakeholders thereby respecting an individual’s moral rights (Carroll 1979). Within the natural resources sector however, corporate social responsibility is controversial due to devastating incidents that potentially show an uncompromising corporate disregard for human rights and the environment in pursuit for profits (Coronado and Fallon 2010). Examples cited include the Deepwater Horizon BP disaster (Elkind, Whitford, and Burke 2011) or the most recent BHP Brazil Samarco mine dam disaster (Hoyle 2015).

Within the global economy, competition is increasingly volatile and global in nature creating an environment of “hyper-competition” (Dicken 2015, 118), an environment in which benefits to an organisation are “rapidly created and eroded” (D’Aveni 2010, 2). Such environments are dynamic, uncertain, and hostile (D’Aveni 1995). Hyper-competitiveness is not seen as a coercive tactic applied to force marginal producers out of the market but should allow organisations to supply at lower prices to the detriment of marginal producers (D’Aveni 2010). Established firms can alternatively

also continue to build stocks of supply in the market, driving down the resource sale price thus forcing marginal producers to realign costs in order to survive (Bartholomeusz 2015; Latimer 2015). In recent times however, economic pressures such as these have resulted in some high cost mines closing; frozen pay and conditions, as well as staff redundancies.

As a source of workforce gains from the point of view of skilled vacancies, knowledge acquisition can occur through interstate or overseas migration. Across all Australian states, Western Australia recorded a gradual increase of net interstate migration from 2,100 persons in 2003-04 to 8,000 persons in 2012-13 (ABS 2013). Temporary Work (Skilled) visa (subclass 457) is another critical means to attract overseas skilled labour to bridge skills gaps.

The Temporary Work (Skilled) visa (subclass 457) allows skilled workers to come to Australia and work for an approved business for up to four years ... A business can sponsor someone for this visa if they cannot find an Australian citizen or permanent resident to do the skilled work (Department of Immigration and Border Protection 2015).

The overuse of foreign workers on Temporary Work (Skilled) visa (subclass 457) to fill job vacancies is however seen as a short-term (Bahn, Barratt-Pugh, and Yap 2012) strategy with larger long-term “social consequences” (Bahn, Barratt-Pugh, and Yap 2012, 3). Canadian International Council (2014, 6) concur with this with a recommendation stating that the use of temporary workers to fill vacancies should only be seen as a “short-term strategy” as this has adverse long-term social consequences within communities. The Canadian International Council (2014, 2) report commissioned to understand how Canada can manage its natural resource wealth focuses on Canada’s “rich natural resource endowment” and the lessons from countries similarly rich in natural resources that can be applied.

This researcher sees the Canadian International Council (2014) report as particularly relevant to this study as, Canada and Australia are both natural resource rich and closely ranked in diverse minerals and metals production as shown in Table 1.2. The natural resource sectors in Canada and Australia face similar geographical,

infrastructural as well as skills and innovation challenges making the questions being addressed by the Canadian International Council highly relevant to the Australian natural resource sector. That is, how can Australia improve the management of its wealth of resources in a sustainable manner for current and future generations? The report also states that Canada should rely on the Australian research culture for lessons learnt as the resources sector in Canada is facing a similar skilled labour shortage with “skilled labour in increasingly short supply.” Table 1.2 shows the closeness of global resource production rankings for Canada and Australia.

Table 1.2: Global Production

Ranking by Country as of December 2010								Platinum
Country	Titanium	Uranium	Aluminium	Diamond	Nickel	Zinc	Gold	Metals
Australia	2	3	4	5	4	2	2	8
Canada	1	2	3	4	5	6	8	5

(Adapted: Canadian International Council 2014)

Table 1.3 presents Migration and in particular Net Overseas Migration (NOM) statistics. It shows that NOM contributed to an increase in the skilled workforce with Western Australia attracting 21.2% of total NOM numbers in 2012-13 and 28.2% of the total permanent and temporary skilled visas granted in 2011 (ABS 2013). However, the Temporary Work (Skilled) (subclass 457) visa holder departures were forecast to increase in 2013 due to a predicted slow economic growth (Department of Immigration and Border Protection 2013). Negative long-term consequences can potentially be experienced as overuse of temporary workers (Canadian International Council, 2014) or the overdependence of filling vacancies through overseas or interstate migration does not address the root cause of skilled shortages but instead creates “long-term social difficulties” (Canadian International Council, 2014, 74).

The Temporary Work Skilled Visa 457 class has been subject to considerable political campaigning against it with the union movement in Australia claiming that the “use of 457’s forces down wages, lowers occupational health, and safety standards and causes worker exploitation” (Phillips 2008, 19). Dependence on temporary workers is also seen to eliminate organisational pressure to be creative and innovative (Canadian International Council, 2014).

Table 1.3: Net Overseas Migration

Net Overseas Migration (NOM)	NOM (No)	%	NOM Arrivals	%	NOM Departures	%
State or Territory - 2012-13						
Western Australia	51,809.0	21.2	84,874.0	16.7	33,065.0	12.5
All territories Australia	244,371.0	100.0	508,662.0	100.0	264,291.0	100.0
Groupings and Visa - 2011						
Temporary Work Skilled (subclass 457)	29,556.0	14.4	42,015.0	9.2	12,459.0	5.0
Permanent Work Skilled	28,362.0	13.8	36,231.0	7.9	7,869.0	3.1
Total	205,679.0	100.0	456,258.0	100.0	250,579.0	100.0

Adapted: Australia Bureau of Statistics (2013).

Most organisations face a dynamic complex competitive landscape (Sirmon et al 2011) driven by economic factors of globalisation and technological advances (Pieterse 2015) that result in dynamic change and the need to deliver quality information and data (Ireland & Hitt 1998; Sirmon et al 2011). Innovation and rapid knowledge production therefore becomes essential to organisational existence (Bettis and Hitt 1995), competitive advantage, and sustainability.

Knowledge and innovative capability can organically be generated or inorganically acquired (Starovic and Marr 2003) and while organisations in the resource sector employ considerable cutting edge technology and innovative ways of operating, much of this technology and best practice is developed or integrated within externally procured equipment (Canadian International Council, 2014) or services. Organically leveraging and improving on knowledge and innovative capability is challenging but crucial with most organisations unable to capitalise on the skills and knowledge resident within its workforce.

1.3 Significance

Motivated to explore current leadership practices within the resources sector, this research aims to provide a better understanding to operationalizing adaptive leadership. This will potentially lead to increased effectiveness, productivity, staff satisfaction, staff retention, global competitiveness, and sustainability. The findings from this research are likely to be beneficial and have implications to other sectors with a highly skilled workforce looking to achieve sustainability as well as

competitive advantage through effective leadership and intellectual capital management practices.

Dynamic changes in competitive environments mean that organisations have to structure themselves strategically to be able to respond rapidly as the markets and environments that they operate in are increasingly intricate with condensed product lifecycles. Intangibles are becoming essential value creators, as many organisations are knowledge intensive and reliant on the expertise of their staff for success. Thus, fostering creativity and effectively deploying the resultant emergent knowledge becomes critical.

1.4 Complexity Leadership Overview

A Complexity leadership theory lens as an approach to this research is consistent with the unpredictability (Ploughman and Duchon 2008) of Western Australia's resource industry and its context of resource constraints and dynamic internal and external contextual factors. Complexity leadership theory focuses on the dynamic adaptive behaviours of interacting, interdependent agents within systems under conditions of internal and external pressures. Complexity theory argues that the future of a system lies in its patterns of internal interactions that result in behavioural as well as attitudinal change within interacting agents, thus enacting adaptive leadership making organisations more adaptive in the process, (Plowman and Duchon 2007). It also recognises that social processes within organisations are too intricate to attribute to individuals with leadership primarily being a system phenomenon that results from informal interactions between organisational agents (Marion and Uhl-Bien 2001).

Researchers argue that conventional views of leadership have a cybernetic focus, that is, leaders regulate and control organisational behaviour in an attempt to achieve results (Plowman and Duchon 2007). Cybernetic leadership views leadership as an individual act of influence rather than the result of complex interactions that take place amongst organisational agents (Uhl-Bien, Marion, and McKelvey 2007). Thus, it neglects the importance of unpredictability amongst interacting agents, as leaders cannot easily coerce individuals into operating mechanically (Plowman and Duchon 2007).

Many organisations in the developed world are knowledge intensive organisations resulting from the often turbulent and fast evolving global environment in which, intangible assets such as brands, intellectual property and relationships, are becoming key value drivers (Marr, Schiuma, and Neely 2004). Within such organisations, knowledge creation takes place through the process of agentic interaction (Solesvik 2015) particularly informal interaction. Thus, knowledge creation is seen to be interaction dependent as well as dependent on other factors such as trust and organisational culture (Lim and Klobas 2000) thereby highlighting a strong link between intellectual capital management and complexity leadership.

1.5 Research Question & Objectives

Based on the perceived need for better understanding of the links between adaptive leadership, knowledge management, social capital, creativity, and innovation, this project aims to address the following objectives:

1. Investigate how adaptive leadership is operationalized in the resource sector.
2. Explore how creativity and innovation are generated internally from informal agentic interaction.
3. Gain insights into how system level self-organisation emerges from informal agentic interaction.
4. Understand the impact of operationalizing adaptive leadership on organisational social capital particularly transient social capital.
5. Examine how adaptive leadership can influence social capital especially transient social capital.

Thus assisting in answering the research question that motivated this study:

How can Adaptive Leadership leverage on intellectual capital management to positively impact on social capital, creativity, and innovation?

1.6 Key Findings

This chapter provides a background for the research, research objectives, as well as significance of the research to the Western Australian resources industry. Various

sources highlight the importance of the resources sector to the Western Australian state economy and the impact of skilled labour shortages within the sector.

With a homogenous nature of products and processes globally within the sector, the potential for creativity and innovation acquisition from the external mind and the transient nature of labour skills is prevalent. The Western Australian resources sector faces additional environmental challenges that influence its competitiveness for example, global commodity prices, currency exchange rates, and delays due to native title claims (ABS 2002).

A model emerged from the findings and analysis of data showing the features and elements that enable or hinder adaptive leadership to leverage on intellectual capital management thereby encouraging, facilitating, and positively influencing social capital, creativity, and innovation. This emergent model captured four key dimensions of data reflecting insights from participant's stories and views. These are; elements that hinder, elements that foster, internal and external environmental elements. The emergent model in Figure 5.1 proposes the interrelationships between these key dimensions.

Three groups of factors; individual, relational, and organisational were identified from the literature review in Chapter 3 and discussed using the proposed framework in Figure 3.1. Analysis of data shows that these groups give rise to tension within the organisation. Additionally, the analysis of findings suggests that organisations need to consider specific factors within each of these groups to ensure adaptive leadership provides a context for creativity and innovation. The analysis of findings also identifies a number of factors and elements that generate tension within the organisation. Tension is one of the two main drivers of adaptive leadership with these identified factors seen to dampen creativity and innovation within this research organisation.

A key highlight from this research is the need to understand tension that is necessary to foster creativity and innovation and how this balances against tensions that assist the organisation in maintaining the status quo. With this need in mind, the model in Figure 6.3 reflects the need for a structural space that organisations in particular this

research organisation needs to facilitate. Structural space is the area of creative tension and innovation that results from the tension generated between maintaining a cybernetic leadership focus against the need to be creative and innovative through an adaptive leadership focus. Potentially, this is the balance required between the need for a standardised process and the need to be creative and innovative within an organisational context.

1.7 Thesis Structure

Presented and discussed in seven chapters, this thesis structure is summarised in Figure 1.1.

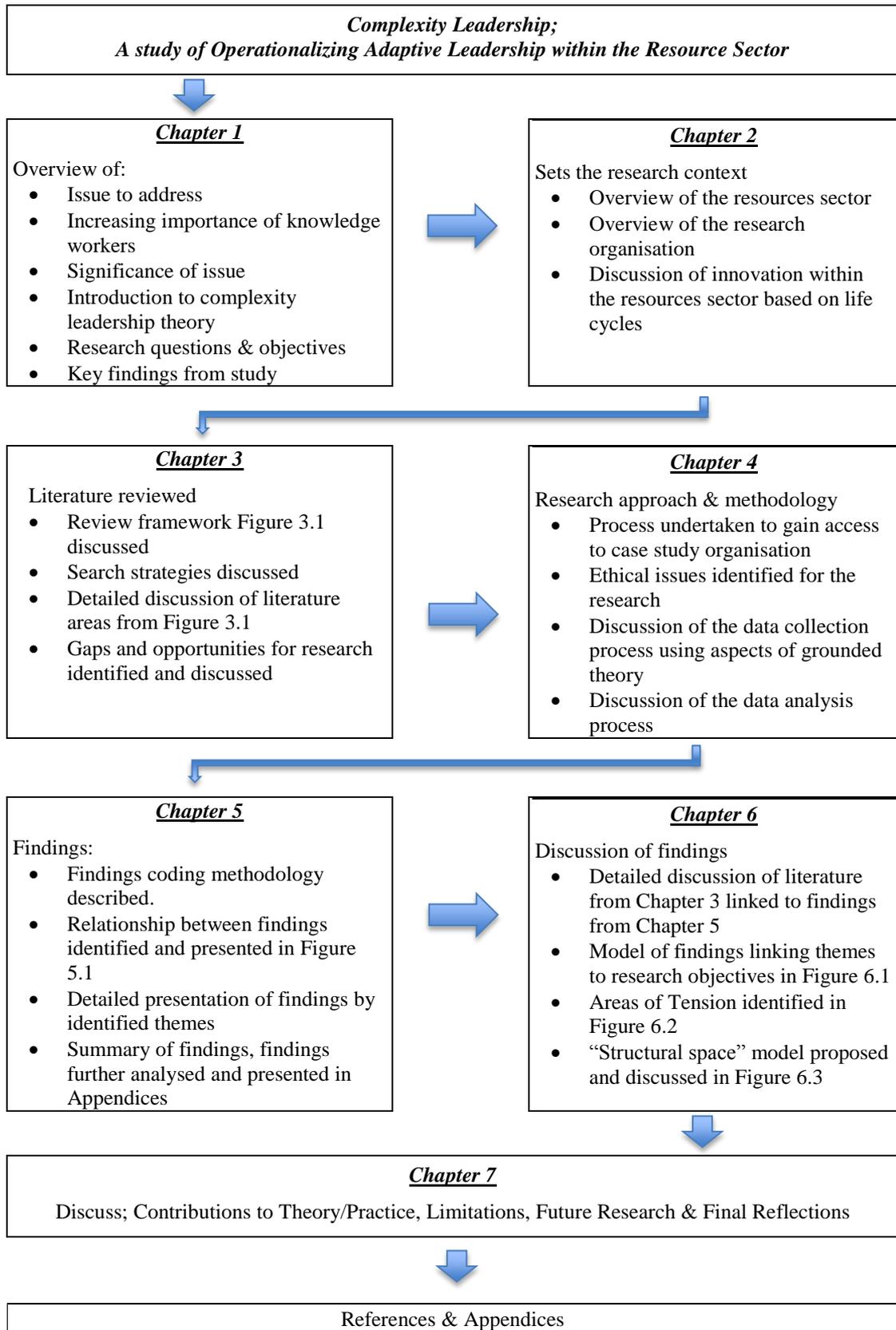


Figure 1.1: Thesis Structure

2 Chapter Two: Setting the Context

2.1 Introduction

Extractive industries represent the “beginning of the beginning”, the initial stage in the basic production circuit and in the web of global production networks that make up the global economy with the basis of non-renewable natural resources; materials created and stored in nature through complex biophysical processes over vast periods of time (Smith 2005, 243).

This chapter sets the research context by discussing the resources sector in Western Australia, background of the research organisation as well as innovation within the resources sector. Different stages within a typical life cycle of a mine also provide context in considering innovation within the study sector.

2.2 The Resources Sector in Western Australia

The value of Western Australia’s mineral and petroleum industry in 2014 reached just over \$114 billion (DMP 2014, 2).

Being dynamic with significant external risks, the resources sector in Western Australia is potentially a complex system evolving through the entry, exit, and transformation of agents leading to challenges within organisations. Fuelled by the increasing shortage of skilled labour, this sector also attracts a transient mobile workforce possessing the specialised knowledge and skills necessary to work in highly demanding work and environmental conditions.

The natural resources sector dominates the local Western Australian economy with Mining and Mining-related industries excluding Electricity supply contributing, on average, an estimated 20.9% (\$12.8 billion) annually to Gross State Product (GSP) from 1995–1996 to 1999–2000 (ABS 2002). With new developments and increasing Greenfield investments since 2000 similar to this research organisation, GSP contribution has significantly increased, with an estimated annual average of 26.7% (\$25.9 billion) from 2001-02 to 2005-06 (ABS 2007) with the Western Australian GSP for the years 2013-2014 recorded as approximately \$237 billion (DMP 2014).

Resource organisations operate in global markets, therefore to be competitive, it is crucial for these organisations to be able to compete globally (Canadian International Council, 2014). With foreign ownership, there is also a high likelihood of knowledge spillover across borders between an organisation and its parent country and vice versa (Sharpe and Long 2012). As with this research organisation, head office and management share engineering expertise, additionally, local experts share their environmental expertise. Falls in commodity prices have resulted in resource companies reevaluating capital projects and further investment in the sector. However, there is an expectation that the resources sector will still dominate the Western Australian economy (DMP 2014). There is significant investment within the sector with the DMP (2014, 2) estimating;

As at March 2015, Western Australia had an estimated \$179 billion worth of resource projects under construction or in the committed stage of development. A further \$118 billion has been identified as being allocated to planned or possible projects in coming years.

The impact of globalisation was highlighted in 2014 – 2015 with sudden falls in market prices of commodities mined within Western Australia e.g. iron-ore. The drastic drop in price was predominantly due to an oversupply within the market by more established resource organisations. This forced junior to mid-tier miners to shed staff and shelve projects potentially leading to social capital erosion as well as an increase in future adaptive challenges. Mid-tier mining organisations are those that have a market value of between US\$500million and US\$5billion (Moogy 2008). Consequently, junior mining organisations have market values of less than US\$500million with top-tier mining organisations having market values of over US\$5billion.

Table 2.1: Organisations operating in the Australian resources sector

Tier	Market Value \$Billions (bn)	Number of Organisations Operating		
		2012	2013	2014
Top	\$5.0bn and above	8	7	10
Mid	\$0.50bn to \$4.90bn	38	25	28
Low	\$0.01bn to \$0.49bn	569	576	558

(Adapted: Morningstar 2016)

In the context of this research, organisational market value includes the current and ongoing construction cost of projects with junior to mid-tier miners more likely to be highly leveraged or seeking scarce funding for their projects. In this globally competitive environment, it is therefore crucial for organisations to meet adaptive challenges effectively to capitalise on internally generated creativity and innovation as well as ensuring the retention of this advantage within the organisation. To meet adaptive challenges effectively, an organisation increasingly needs new learning as well as a culture and behaviour that supports and results in adaptive outcomes, creativity, and innovation.

2.3 The Research Organisation

The research organisation is a junior to mid-tier organisation within the natural resources sector that commenced operation as a Greenfield investment in early 2005. It is a division of a foreign owned conglomerate, has gone through the traditional capital investment life cycle stages, and at the time of this research is at production ramp up stage. A key characteristic of industries such as natural resources is that they are location specific, thereby involving significant investments in due-diligence exploration, extraction, and processing as well as building and maintaining supporting infrastructure (Smith 2005).

This research organisation potentially exhibits characteristics of a complex system as it has multiple nodes or levels within its organisational structure potentially allowing for many interactions in and across different organisational levels. This has the potential of creating a network of “dense, rich connections” (Plowman et al 2002, 192). The local organisation hierarchy consists of twelve Senior Directors reporting to the Chief Executive Officer who reports to the Chairman who ultimately reports into an Overseas Board of Directors. In addition, numerous levels underneath the twelve Senior Director Positions potentially facilitate dense, rich connections (Plowman et al 2002) and strong ties to co-exist. The strength of ties results from the “amount of time spent together, the emotional intensity and intimacy as well as reciprocity of services provided” within the relationship (Granovetter 1973, 1361). That is, not only do organisations operating in complex environments require a degree of top-down centralised control to be able to exploit available resources but they also require bottom up autonomy to innovate and respond effectively to the

changing global environment by capitalising on employee heterogeneity (Panzar et al 2007).

Hierarchical-bureaucratic organisational structures can however impose limits to learning, knowledge creation and sharing, consequently influencing the generation of innovation within the organisation (Kalkan 2008). Alternatively, an innovative organisational structure involves multidisciplinary groups working with high degrees of autonomy facilitating cross levelling of knowledge (Nonaka and Takeuchi 1995). This enables the organisation to operate as an open-system rather than a closed system allowing information exchanges with and from the external mind (Nonaka and Takeuchi 1995).

2.4 Innovation in the Resources Sector

Key methods of creating competitive advantage available in mature industries such as natural resources is being low resource cost relative to others within the same sector (Kumar and Tiwari 2011) as well as process innovation (Escobar and Vredenburg 2010) that generates cost efficiencies. Given appropriate conditions within an organisational environment, creativity and process innovation is possible at all points throughout the resource life cycle. The natural resources sector is however dependent on the skills and knowledge of knowledge workers who keep abreast of new technologies and developments within their fields. They are therefore able to advise management on developments that “may become firm or industry-first innovations in the future” (Sharpe and Long 2012, 9).

The resources sector has two defining characteristics that determine the type of innovation that the sector implements (Sharpe and Long 2012). Firstly, the product is relatively generic, and thus continually improving processes is more important than product innovation. Secondly, due to the nature of the resources sector, it generally uses tried and tested technology developed by other organisations through newly acquired machinery and equipment with integrated innovation thereby taking minimal risks (Sharpe and Long 2012). This therefore limits opportunities for innovation within the sector.

As illustrated in Figure 2.2, innovation in Stage A is usually limited during the construction phase as standard supporting infrastructure is being constructed, assembled and mobilised with innovation predominantly being inorganic and integrated within acquired equipment and services. To remain competitive, organisations within the sector generally employ innovative ways of operating as well as leading edge technology. However much of this is developed and is implemented by other external firms or the external mind rather than developed by internal organisational processes (Canadian International Council, 2014). There is also an increasing movement to engage with the external mind by outsourcing operational aspects to contractors within other industries (ABS 2002) allowing organisations to remain competitive and reduce cost.

An organisation's product orientation however may result in some of its knowledge becoming entrenched within its product and internal processes whilst some of the knowledge resides as tacit knowledge within its employees thereby increasing the level of "tacitness" within the organisation (Kianto, Hurmelinna-Laukkanen, and Ritala 2010, 316). This creates inherent risk transference to the organisations customer base thereby adding pressure to the organisation to codify knowledge. In Stage B, given optimal conditions innovation can be organic and internally generated. This stage potentially reflects the significant productive years of the organisation's mine life within the sector.

Low cost relativity and comparative advantage for resource organisations in Australia is critical due to competition from established markets such as South America and Canada. If being a low cost producer of the resource is not a viable option, then organisations need to look at creating a comparative advantage by vertically integrating their value chain in order to coordinate and guarantee delivery of product (Kogut 1985; Lin, Parlaktürk, and Swaminathan 2014). This research organisation utilises an innovative process to value add to the extracted natural resource and is logistically in a unique position to provide the value added material to internal group customers internationally in a vertically integrated value chain. There exists a high degree of vertical linkage between the research organisation and its internal group customers. As the principal extractor and refiner of this resource, this makes it critical for the organisation to engage in, generate, and capitalise on

organic creativity and innovation to maintain its competitive and comparative advantage enabling downstream vertically linked industries to mutually share in the benefits of the organisation's organic creativity and innovative efforts (Sharpe and Long 2012).

Stage C reflects end of mine life with rehabilitation and land reclamation activities taking place. In this stage, standard regulatory and environmental procedures ensure that there is no trace of activity left behind. Therefore, at this stage purchased services undertaken by specialist-contracted firms potentially integrate creativity and innovation within the service they provide. A typical mine life cycle curve is illustrated in Figure 2.1, with the life cycle stages illustrated in Figure 2.2. Due to competition and specialities at different stages of the life cycle, potential also exists for knowledge diffusion from the organisation into the sector where knowledge can be absorbed by competitors as well as creating opportunities for the organisation to absorb knowledge from others (Fischer and Fröhlich 2013). This creates a network of knowledge with the external mind that allows the organisation to benefit from the exploration and implementation of innovative ideas by other organisations.

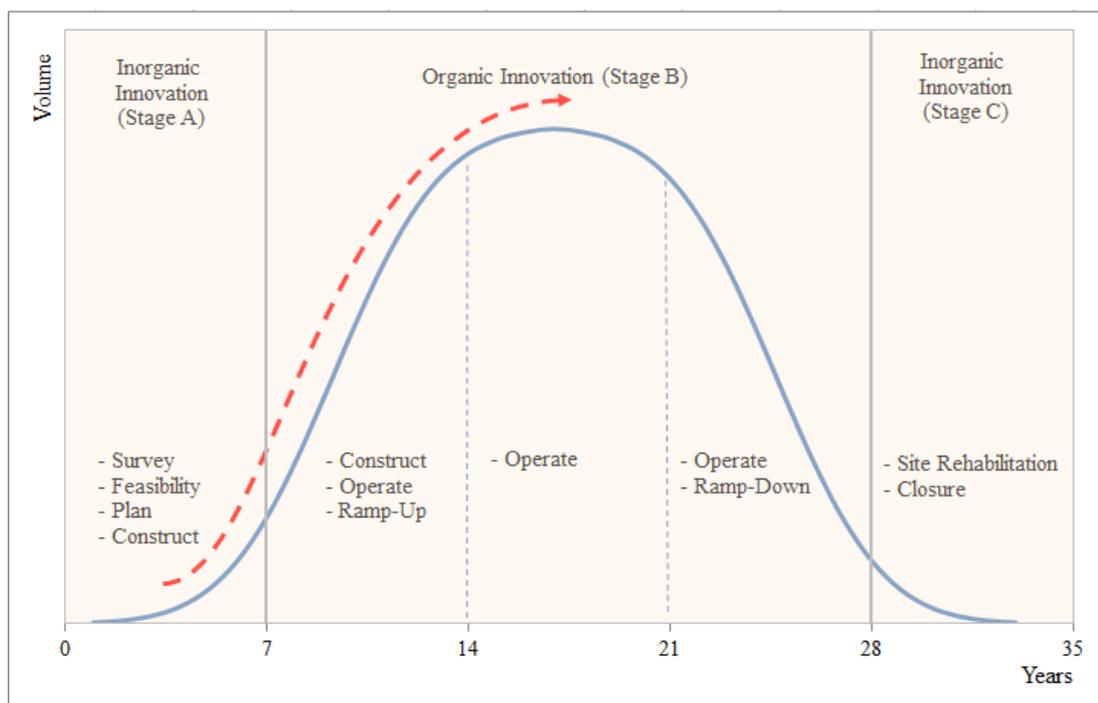


Figure 2.1: Mine Life Cycle Curve
(Adapted: Levitt 1965; Gaubinger et al 2015, 208)

2.5 Chapter Summary

The purpose of this chapter was to set the context for this research study providing a brief overview of the resources sector within the Western Australian context as well as the position of the research organisation within the sector. Different stages within the mining life cycle highlight and discuss the possibility of innovation within the sector at the different stages. The importance of the resources industry to the Western Australian economy highlights the importance of innovation within the sector in order to maintain competitive and comparative advantage over other resource producing companies as well as countries.

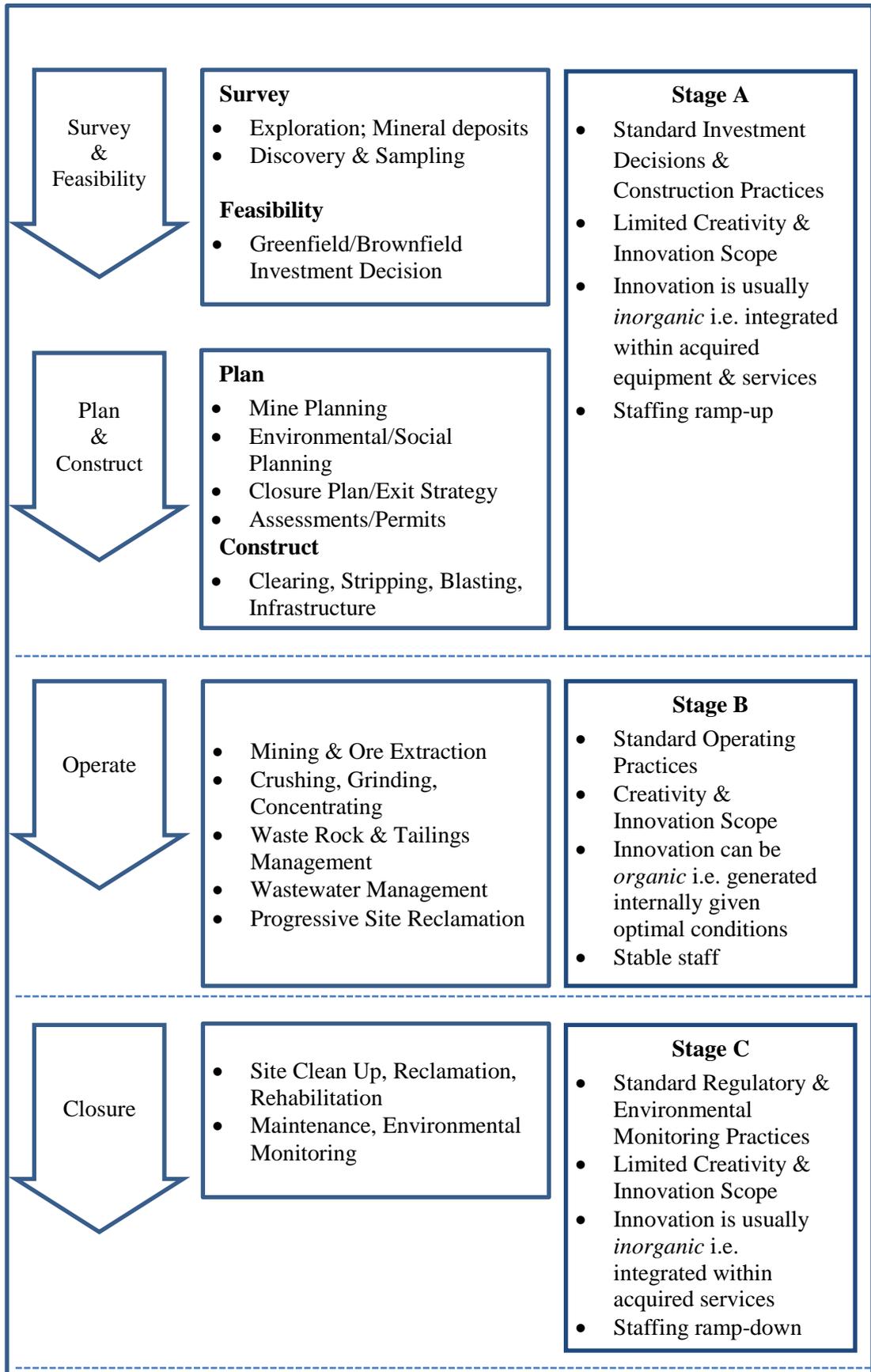


Figure 2.2: Mine Life Cycle Stages
(Adapted: Environment Canada 2009)

3 Chapter Three: Literature Review

The aim of this literature review is to identify conditions in relation to creativity and innovation that research indicates are or can be internalised within the organisational context. These conditions are relatively more controllable, influenced by factors within the organisational context compared with external influences, and include factors and conditions such as leadership decisions, culture, financial and budgetary, as well as human and social capital.

Leadership literature within an organisational context is explored with a particular focus on the adaptive leadership element of complexity leadership, intellectual capital, social capital, creativity, and innovation. Peer reviewed articles relevant to the research topic were examined with articles predominantly selected from academic databases including Scopus, ProQuest, EBSCOhost, ABI/INFORM Global, EmeraldInsight and Elsevier. Articles were filtered and selected based on the search strategy relevant to the theory and area under research as outlined in Table 3.1: Literature Search Strategy.

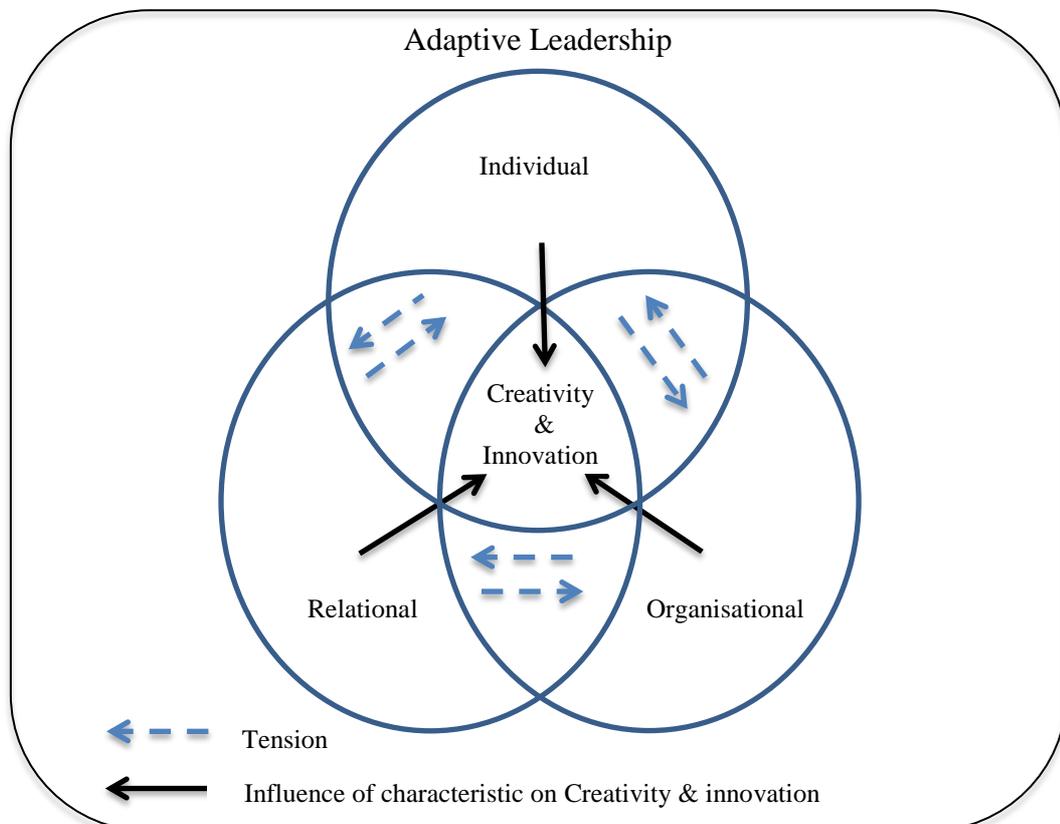


Figure 3.1: Literature Review Framework

As the review developed, it appeared that relevant conditions could broadly be grouped into individual, relational, and organisational characteristics enveloped within an adaptive leadership framework. The framework in Figure 3.1 illustrates broad themes from within literature with the framework used to discuss literature reviewed in this chapter.

3.1 Literature Search Strategy

Initially, to understand the body of research to date, the year range for the literature search was open ended, with no restriction placed on the years reviewed. Adopting this approach guided the literature search process by focussing on highly cited, publications included on doctoral studies reading lists and supervisor recommendations. An initial broad understanding of the literature facilitated the development of a more focussed search strategy with more recent literature sought using academic databases to identify peer-reviewed articles published between the years 2013 – 2016. Table 3.1 outlines the initial search strategy used relevant to area under research.

Table 3.1: Literature Search Strategy

Main Search Term		Additional Search Terms	Databases
Adaptive Leadership	<i>AND</i>	Creativity	ProQuest
		Innovation	EBSCOhost
		Trust	ABI/INFORM Global
		Diversity	EmeraldInsight
		Social Capital	Elsevier
		Human Capital	Scopus
		Intellectual Capital	
		Interaction	
		Communication	

An additional strategy utilised was to select literature articles by influential researchers of complexity leadership and analysing these further to select articles for more recent citations for example at the date of this review, Uhl-Bien, Marion, and McKelvey (2007); has been cited 365 times since publication with 39 research article citings in 2016 alone. Additionally, a further review and analysis of the 2016 cited

articles to understand current conversations taking place in this sphere of research was undertaken.

To identify potential gaps that this study proposed to address, literature terms were combined and searched as shown in Table 3.2. The two main terms selected were Adaptive Leadership and Creativity, as these are fundamental to address the question undertaken for this research with search terms sequentially selected from the additional terms column. For example, this researcher conducted a search using Adaptive Leadership AND Creativity AND Trust. This resulted in one published research article from All Years and one published research article in the years 2013 to 2016. The *All Years* column in Table 3.2 reflects the number of articles published to date and identified through the search strategy outlined above with articles published between the years 2013 and 2016 shown in the *Current* column.

Table 3.2: Literature Gaps using Adaptive Leadership and Creativity

Main Search Terms		Additional Terms	All Years	Current
Adaptive Leadership	AND	Innovation	4	2
AND		Trust	1	1
Creativity		Diversity	0	0
		Social Capital	0	0
		Human Capital	0	0
		Intellectual Capital	0	0
		Interaction	1	0
		Communication	0	0

Subsequently, the search strategy was repeated by swapping the search term Creativity with Innovation that is, a search was conducted using Adaptive Leadership AND Innovation AND Trust. This resulted in 1 published research article from All Years and 1 published research article in the years 2013 to 2016 with results obtained shown in Table 3.3. The results of this search strategy suggest limited literature exists that investigates the process of operationalizing Adaptive Leadership by taking an integrated approach to the individual, relational, and organisational characteristics that result in creativity and innovation.

Table 3.3: Literature Gaps using Adaptive Leadership and Innovation

Main Search Terms		Search Terms	All Years	Current
Adaptive Leadership	AND	Creativity	4	2
AND		Trust	1	1
Innovation		Diversity	0	0
		Social Capital	0	0
		Human Capital	0	0
		Intellectual Capital	0	0
		Interaction	2	1
		Communication	0	0

This literature review commences with and briefly discusses the prevalent leadership model found in most organisations that is, cybernetic leadership followed by a detailed discussion of individual, relational and organisational characteristics leading onto a discussion of adaptive leadership and concluding with identified opportunities for further research. This literature review structure also reflects and suggests that within an organisational context, a cybernetic leadership framework can potentially evolve into a complexity leadership framework by applying and engaging with the individual, relational, and organisational characteristics that are discussed in this chapter.

3.2 Cybernetic Leadership

Conventional views of leadership have a cybernetic focus that is; leaders are regulators who control organisational behaviour in order to achieve results. By using “feedback loops” (Liang 2015, 202) that constrain emerging self-organisation as a divergent activity in need of management control and rectification (Plowman and Duchon 2007). Traditionally, this type of leadership is attributed to position based authority regardless of traits displayed within the position with the conventional view effectively suggesting that leadership belongs to the person occupying the position (Uhl-Bien, Marion, and McKelvey 2007).

There is also a common perception that the cybernetic view of leadership involves one individual exerting purposeful power over another individual thereby directing them towards achieving previously identified organisational goals (Dwyer et al 2013;

Yukl 1999). Thus failing to recognise that leadership is entrenched in complex multiple interacting forces and is not merely the influential act of one individual (Uhl-Bien, Marion, and McKelvey 2007).

Cybernetic leadership is broadly discussed as including two distinct styles of leadership, transactional or transformational (Bass 1990; Kanungo 2001), usually present within the same organisation. Transactional leaders are more concerned with routine processes such as distributing resources, observing, and instructing their staff to achieve task as well as corporate objectives and visions (Bass 1990; Kanungo 2001). Whereas transformational leaders are concerned with motivating individuals, evolving corporate visions thereby establishing a base for organisational strategies, guidelines, and processes (Allen et al 2016; Bass 1990; Kanungo 2001) potentially fostering creativity and innovation (Waddell and Pio 2015). The cybernetic leadership model ensures conformity to an organisational vision and standard operating procedures that underlies staffing the organisation with people from similar backgrounds (Allio 2008), thus introducing homogeneity within the organisation with a potential risk of the occurrence of groupthink.

One prevailing critical view of the cybernetic leadership model is that it makes ineffective use of the full creative potential and emotional commitment of employees who devote their life to serving organisations (Allio 2008). Consequently, becoming less useful (Lichtenstein et al 2006) with researchers suggesting that leadership thinking should evolve to consider complex adaptive organisational requirements and thus seek value adding through social outcomes (Meindl, Ehrlich, and Dukerich 1985; Nan, Zmud, and Yetgin 2014).

3.3 Detailed Discussion by Literature Areas

As illustrated in Figure 3.1, enveloped within an adaptive leadership framework, three main groups of factors evident in academic literature potentially influence creativity and innovation within an internal organisational context. Within this review, these factors or characteristics are predominantly individual, relational, or organisational in nature. It should however also be noted that these characteristics are intricately linked, overlapping, and influencing each other through tension as shown

in Figure 3.1 making distinct compartmentalisation of characteristic impractical. This next section begins with a description of these characteristics.

3.3.1 Individual Characteristics

Much of the literature to date is focussed on characteristics that are specific to individuals, their importance for creativity and innovation (Heifetz, Grashow, and Linsky 2009; Raney 2014) and how these characteristics interact and relate with other individuals within the organisation. Treated as individual, these characteristics reside in and are integral to the behaviour and conduct of organisational agents. Broadly grouped into intellectual capital, human capital, and social capital, individual characteristics are discussed in more detail below.

3.3.1.1 Social Capital, Human Capital and Intellectual Capital

Social capital is seen as the resources entrenched in, accessible through, and resulting from relationship networks of individuals (Bornay-Barrachina, López-Cabrales, and Valle-Cabrera 2016; Nahapiet & Ghoshal 1998). Social capital fosters human capital (Bornay-Barrachina, López-Cabrales, and Valle-Cabrera 2016) with human capital being the knowledge, skills, and abilities that agents take with them when they leave an organisation (Santagostino 2014; Starovic and Marr 2003). Consequently, intellectual capital is the collective knowledge that resides in an organisations human capital. Numerous researchers have discussed and described the concept of intellectual capital however; a universally accepted definition is yet to be identified (Martín-de-Castro et al 2011). Hsu and Fang define intellectual capital as

...the total capabilities, knowledge, culture, strategy, process, intellectual property, and relational networks of a company that creates value or competitive advantages and help a company achieve its goals (Hsu and Fang 2009, 665).

Intellectual capital is commonly categorised into organisational “human, relational, and structural capital” (Hsu and Fang 2009, 665; Starovic and Marr 2003, 6). Recognised as assets that underpin capabilities and core competencies thus playing a key strategic role (Cabrita and Bontis 2008; Marr, Schiuma, and Neely 2004) in organisational sustainability.

Intangibles potentially generate corporate value (Starovic and Marr 2003). They are unrecognised assets and undisclosed resources, elements, or capacity attributed to the facilitation of organisation strategy (Steenkamp and Kashyap 2010), collectively referred to as intellectual capital. This suggests that intellectual capital is the single resource most vital for organisational survival and its ability to be innovative, having a significant bearing on the way organisations perform and succeed (Steenkamp and Kashyap 2010) thus, driving growth and competitive position within organisational operating markets (Drucker 1993).

Tacit knowledge that resides within intellectual capital is crucial for generating commercial power (Hall 1992; Maguire 2008), competitive advantage, and sustainability. Tacit knowledge includes concepts and mental thinking agents carry that are vital in differentiating experts from non-skilled workers, often allowing agents to make sense of gaps in understanding (Linderman, Pesut, and Disch 2015).

Sustainable change necessitates a combination and essential transformation at a “mental, emotional, and spiritual level” (Zohar 1997, 10). The spiritual level is not referred to here in a religious context but as a need, that provides deliberation, significance, and value to the agent as well as the organisation, with creativity developing at the spiritual level thus making creative thinking comparable to “quantum thinking” (Zohar 1997, 18). Intellectual capital also refers to the knowledge and knowing capability of social collectives (Hsu and Fang 2009; Nahapiet and Ghoshal 1998) such as groups of agents, with the need for such collectives to cultivate and foster all three levels in order to develop effective intellectual capital.

Intellectual capital can result from creativity or knowledge ultimately converted into innovation (Starovic and Marr 2003). With social capital comprising of structural, relational, and cognitive dimensions facilitating creation of new intellectual capital through agentic interaction, thus allowing information and knowledge sharing through the development of trust, shared norms, obligations, and identity (Baker, Onyx, & Edwards 2011; Nahapiet and Ghoshal 1998).

Due to the perceived urgency to convert data into useful knowledge (Ho 2012) in uncertain and turbulent environments, such as the global uncertainty following the 2008 Global Financial Crisis, organisations have to escalate their learning (Bhat et al 2012) in order to survive (Schreiber and Carley 2006). However, as intellectual capital is now the core competency of organisations (Ramezan 2011), one of the problems facing leaders to retain intellectual capital is developing organisational social capital (Deng and Hendriske 2014). In the process generating and sharing tacit knowledge within the organisation (Smith, Beer, and Mason 2015) to take advantage of new opportunities (Hitt, Keats, and DeMarie 1998) as;

... superior talent will be tomorrow's prime source of competitive advantage. Any company seeking to exploit it must instil a talent mindset throughout the organisation (Chambers et al, 1998, 48)

In the medium or long term, innovation is seen as the only dependable means for organisations to create and achieve high quality results (Allio 2008) where transfer of information or knowledge occurs through interconnected agents (Molloy and Barney 2015) valued as knowledge workers (Oldroyd and Morris 2012). To exploit such knowledge internally (Kang and Lee 2016), organisational agents should be exposed to opportunities to acquire external knowledge and encouraged to internalise it through interaction and communication thus further developing their own knowledge (Allen et al 2016). In organisations, promoting security in employment potentially also generates and maintains social capital. Thus, remuneration strategies that reward teams and individuals who give prominence to teamwork cultivating interchangeability and role sharing for skilled employees can also enhance social capital (Bolino, Turnley, and Bloodgood 2002).

Considerable frustration and stress potentially results from social capital erosion due to poor intellectual capital management practices as well as inadequate leadership strategies (Dess and Shaw 2001; Ton and Huckman 2008). This suggests that a core condition for the successful contribution of intellectual capital to creativity and innovation is to ensure that organisations restrict social capital erosion. Social capital interactions also facilitate the creation and sharing of tacit knowledge as tacit knowledge and intellectual capital have intricate links with social capital, thus

influencing intellectual capital creation (Smith, Beer, and Mason 2015). Erosion of social capital can therefore result in lost opportunities to capitalise on internally generated creativity and innovation (Dess and Shaw 2001; Massingham 2008).

Organisations can potentially be more creative, innovative, and competitive by successfully fostering a social structure that is adaptable and flexible thus leveraging on social capital (Burt, Kilduff, and Tasselli 2013; Chung and Gibbons 1997; Jamali, Yianni, and Abdallah 2011). A flexible social structure is a function of network relations. Therefore, organisations must foster environments that concurrently encourage the growth of human and social capital (Schreiber and Carley 2006).

3.3.1.2 Diversity

Diversity creates the disequilibrium that many believe sparks original thinking, when approached with sufficient motivation (Erbe 2014, XV).

Innovation is seen as an outcome of increased diversity and interaction between diverse agents (Corral de Zubielqui, Jones, and Statsenko 2016) resulting in innovative solutions when agents address challenges that result in-group creativity (Humala 2015). Due to increased globalisation and uncertainty in the environment particularly post the 2008 Global Financial Crisis, staffing organisations with people from diverse cultures, ethnicity, experience, and backgrounds becomes essential as different values; assumptions, beliefs and work habits have been identified as invaluable in facilitating and fostering innovation and learning within an organisational context (Heifetz and Laurie 2001; Friedel 2014). At the same time, effective management of such diversity is necessary to ensure that it does not hinder the generation of creativity and innovation (Friedel 2014).

Diversity within organisations presents in many different dimensions including race, gender, sexual orientation, cultural differences, education, and language amongst others. Friedel (2014, 63) adds “problem-solving” as another dimension of diversity not usually considered. Interactions between agents encourage and or discourage diversity in terms of “priorities, beliefs, habits, loyalties, cognitions, perspectives or routines” (Will 2016, 263). This research study predominantly views diversity in

terms of cultural differences and language. These two dimensions of diversity have direct consequences by creating tension to manage knowledge codification, sharing, and interactions within this research organisation. However, there is scarcity of current research on interpersonal communication within organisations with a diverse workforce (Hofhuis, Rijt, and Vlug 2016) thereby highlighting a gap in understanding the impact of interpersonal communication on organisational sustainability.

A complex systems view also stresses and values interdependency and diversity within organisations (Poutanen, Siira, and Aula 2016). Within a global organisational context with multiple locations, cultural diversity also affects locational inclusivity between the different cultures across the different locations (Moitra and Kumar 2007). Thus, harnessing potential and consequent sustainability of creativity and innovation from such diverse cultures can be challenging for multinational organisations due to the latent difficulties that result from essentialism and thin communication. Consequently, tension exists on effective methods to manage diversity to foster rather than hinder creativity. In short, diversity can be a “double edged sword” (Mazur 2010, 5). Diversity is also context specific, functioning in contrasting ways in varied situations, thus making it crucial to understand the context of analysis (Sawyer 2015).

Multinational organisations also bring with them differences in terms of culture, leadership, management styles, and general modes of operation creating a challenging environment for locally recruited staff having to conform to unaccustomed leadership styles and diverse management behaviours. Challenges of the local operating environment also exist for multinationals in terms of differences in the physical environment, more stringent regulations, policies, and work ethic. A potential risk of essentialism in cultural analysis of global organisations also exists as, “culture cannot be satisfactorily described in terms of a typical individual” (Hofstede 1993, 92).

Within a globalised business environment, intercultural communication has increasingly become critical for acquiring competitive advantage (Tange and Luring 2009) requiring organisations to have the ability to interact with individuals from

diverse backgrounds and cultures (Jonasson and Luring 2012). Personality and trait theory widely accepts the five-factor model of personalities more commonly referred to as the “Big Five” (Costa Jr, and McCrae 2013; Goldberg 1993). McAdams and Pals explain

The Big Five organizes broad individual differences in social and emotional life into five factor-analytically-derived categories, most commonly labelled extraversion (vs. introversion), neuroticism (negative affectivity), conscientiousness, agreeableness, and openness to experience (McAdams and Pals 2006, 204).

Diverse personalities, differences in language, communication styles and other inherent issues caused by thin communication impact on an organisation’s ability to function effectively in global markets where agents educated through different learning processes, cultures and traditions are brought together to interact within the same organisation (Dhir and Gòkè-Paríolá 2002) potentially resulting in cross-cultural misinterpretation.

Despite impressive advances personality psychology has yet to articulate clearly a comprehensive framework for understanding the whole person (McAdams and Pals 2006, 204).

Due to inherent differences in communication styles and the potential lack of a common language, expatriates working for multinational organisations in foreign countries might be unable to resonate and express themselves satisfactorily (Jonasson and Luring 2012). Multinational organisations can potentially also experience a reduced degree of socialising, storytelling and knowledge sharing due to thin communication (Tange and Luring 2009) and essentialism (Jonasson and Luring 2012). This can have inherent negative implications for fostering environments that are conducive for the generation of creativity and innovation.

3.3.2 Relational Characteristics

Much of the literature to date has focussed on the characteristics that are specific to individuals, their importance for creativity and innovation, and how these

characteristics assist in agentic interaction within the organisation. However, the relational characteristics discussed in this section are important and integral to knowledge flows within the organisation. These relational characteristics broadly grouped and discussed below under the headings managed socialisation, agentic interactions, and communications.

3.3.2.1 Managed Socialisation

The challenge for organisations is how to engage, motivate, and foster functional participation amongst its workforce to encourage informal leadership, sharing and building on existing skills and knowledge. Functional participation has the effect of strengthening interpersonal relationships within the organisation (Bolino, Turnley, and Bloodgood 2002) that can also be nurtured by hiring agents who demonstrate the capacity to engage beyond immediate task roles (Marion et al 2016).

When social dimensions are neglected, it results in missed opportunities as it can contribute to an inherent inability within organisations to capitalise on tacit knowledge as this latent knowledge is yet to be codified, expressed, and shared (Moitra and Kumar 2007). By managing this missing social dimension through organisational events for example, team building or social events, such as get togethers or parties (Richards and Busch 2013) organisations are effectively more able to release and influence tacit knowledge (Moitra and Kumar 2007).

High quality relationships between organisational agents are valuable, not easily formed, and are difficult to imitate. An organisation's ability to therefore encourage and facilitate interactions at different levels could be beneficial in forming such high quality relationships within its structure (Nahapiet and Ghoshal 1998). As tacit knowledge held by an employee is not useful in isolation (Kang and Lee 2016), socialisation creates opportunities for tacit knowledge sharing where knowledge is conveyed through the sharing and transmission of experience, skills, and processes (Evans 2013). Thus providing opportunities to identify, rectify, and build upon knowledge deficiencies through the process of rapport, resonance, and synchronization.

In organisations with agents of diverse cultural backgrounds, different groups often interact in their native language. This can mean that socialisation processes result in less than total integration into the dominant, often western, culture (Groggins and Ryan 2013). Within organisations, such distinct groups known as “cliques” casually share information amongst other members of the group (Marion et al 2016, 245). Creating structures within the organisation that support and embrace such groups and encourage greater interaction, these cliques can have the potential to be utilised to increase productivity (Marion et al 2016). Thus, managed socialisation as a process can create opportunities for change (Poutanen, Siira, and Aula 2016), allowing organisational networks, and relationships to reconfigure favourably.

3.3.2.2 Agentic Interactions

Organisations are systems that comprise of thinking adapting human beings capable of learning and creativity resulting in opportunities for influence and leadership emerging in each interaction (Plowman and Duchon 2007). Such system level self-organisation is critical to generate innovative outcomes within the organisation (Corral de Zubielqui, Jones, and Statsenko 2016).

Research increasingly acknowledges that single individuals cannot take credit for interactions that occur within social processes, as interactions are too intricate and chaotic, with leadership transcending the single individual, essentially becoming a system phenomenon (Marion and Uhl-Bien 2001). This suggests that it is helpful to interpret leadership in terms of evolving experiences rather than attributes vested in individuals (Uhl-Bien and Marion 2009). Potentially, interactions are either “fine-grain” or “coarse-grain” with fine-grain interactions occurring at an individual level and coarse-grain interactions occurring at the organisational level (Hazy and Uhl-Bien 2015, 80). Agentic interactions result in emergence through “holism, feedback and boundaries” with “reflexive and “non-reflexive” as the two classes of emergence (Goldspink and Kay 2010, 48). Reflexive emergence occurs when agents are self-aware conversely non-reflexive emergence results when agents are not self-aware

Research also suggests that personal interactions are characterised by nonlinearity and unpredictability, as agents are characteristically self-centred, and autopoietic (Liang 2015; Maturana and Varela 1980). Agents interacting within a group can

therefore be classed as a complex adaptive system due to the influence such interactions play on emergent behaviour within that group (Will 2016) generating unexpected outcomes (Anderson 1999) resulting in innovation within organisations (Corral de Zubielqui, Jones, and Statsenko 2016).

Complexity means that every element within the system is disparate in turn permitting multiple different configurations (Harter 2007). This highlights that interactions between different parts of a complex system and its behaviour as a whole are critical, as any action is likely to have global effects (Surie and Hazy 2006). Interactive activity between agents' can therefore be encouraged by effectively structuring resources and physical facilities (Marion et al 2016) as the nature of such interactions results in collective corporate intelligence (Borzillo and Kaminska-Labbé 2011). Complexity leadership is a framework for understanding such emergent leadership (Uhl-Bien, Marion, and McKelvey 2007) seeking to understand how system level self-organisation emerges from interactions among agents or nodes within organisations (Anderson 1999; Prehofer and Bettstetter 2005).

The complex systems view places emphasis on the potentially creative outcomes of emergence through agentic interaction at lower levels within the organisation (Poutanen, Siira, and Aula 2016). Consequently, leadership becomes a collaborative activity whereby any individual through interactions can situationally contribute by becoming a leader or a follower as the situation demands or permits (Lichtenstein et al 2006) enabling employees to accomplish their roles effectively and enhance collective and individual capacity (Yukl 1999). This is also known as plural leadership (Denis, Langlely, and Sergi 2012). However, an understanding of how system level self-organisation leads to innovation is yet to be explored and understood (Corral de Zubielqui, Jones, and Statsenko 2016). This is relevant but beyond the scope of this research study.

A core focus of this research is to understand how agentic interaction organically generates creativity and innovation. This will potentially assist in creating a climate that positively encourages interaction, translating such interaction into increased innovation, creativity, and highly motivated, engaged organisational social capital resulting in organisational competitive advantage and sustainability.

3.3.2.3 Communication

Focusing on and understanding how leadership develops and functions during agentic interaction can foster creativity, influence, and positive change (Lichtenstein et al 2006) resulting in the emergence of adaptive leadership as highlighted by the following

A major source of organisational predictability comes from the ongoing interactions of individuals and groups in the organisation whose actions; exchanges, interactions, and adaptations to each other's actions are not controlled or even known by organisational leaders (Plowman and Duchon 2008, 138)

... these interactions have a bottom up quality (Marion and Uhl-Bien 2001, 392)

... which no one fully understands or is able to fully predict the outcome of (Preiser and Cilliers 2010, 268).

In a turbulent environment, the future of an organisation relies on rapidly changing pattern configurations (Uhl-Bien and Marion 2009) where vigorous and ongoing nonlinear exchanges amongst system agents take place (Lord 2008) allowing the system to swiftly adjust to unexpected challenges (Uhl-Bien and Marion 2009). In the complex systems view, organisations are social networks, comprised of networked adaptive agents who “resonate” through communicating common concerns, learning, and objectives based on their interactions (Lichtenstein et al 2006, 3). Organisational agents include adaptive agents from the environment (Holland and Miller 1991) thus networking with the external mind with leadership often shaped by the subtle and complex dynamic interactions between these networked agents (White, Currie, and Lockett 2016). Organically generated creativity also has a strong bearing on organisational innovativeness making it easier to integrate knowledge from the external mind (Corral de Zubielqui, Jones, and Statsenko 2016).

Effective communication is critical within organisations with a highly diverse workforce, allowing consideration of differing agentic views thus fostering creativity, and innovation (Chin, Desormeaux, and Sawyer 2016). Organisations in

the natural resource sector generally have production site offices as well as geographically dispersed head offices. Consequently, the intensity and effectiveness of communication that leads to collaboration with and between agents at these different geographical locations could potentially generate innovation capability and organisational success (Allen et al 2016).

A focus on effective communication through agentic interactions offers a leadership model whereby perplexing issues can easily be explored (Uhl-Bien and Marion 2009) as organisations operating as complex systems have a shifting array of partially conflicting desired conditions or objectives (Hunt, Osborn, and Boal 2009). Four elements of such complex systems have been highlighted and discussed in literature reviewed (Surie and Hazy 2006) that enable and sustain generative relationships (Carmeli, Brueller, and Dutton 2009; Lane and Maxfield 1996) yielding new knowledge significant to innovation (Surie and Hazy 2006) and consequently organisational sustainability as well as competitive advantage. These four elements suggest that

1. Organisational outcomes emerge from agentic interaction at lower levels (Holland and Miller 1991);
2. Self-organisation within a system emerges resulting from the interdependent behaviour of agents who act on local information (Anderson 1999; Prehofer and Bettstetter 2005). These interactions are nonlinear (Rotmans and Loorbach 2009) and are rarely explained by simple-cause-effect mechanisms (Litaker et al 2005);
3. Dynamic and non-static processes and structures also emerge from such nonlinear interaction (Anderson 1999; Prehofer and Bettstetter 2005); and
4. Complex systems emerge and evolve over time through agentic composition and transformation (Surie and Hazy 2006). These systems change in unpredictable ways because of non-linearity creating often-amplified results and thus becoming more complex in the process (Lichtenstein and Plowman 2009). In summary, Multinational organisations with a transient workforce operate in such a dynamic environment, constantly undergoing transformation through the entry and exit of agents.

Creativity is fundamental to generating knowledge. Creativity is essentially volatile in nature with outcomes that are not predictable and that exhibit in different states (Starovic and Marr 2003). Thus, organisations that exploit their relational networks as a knowledge source and a collaborative approach stand a much better chance to innovate than those choosing to do it alone (Canadian International Council 2014), thereby fostering creativity and generating innovative solutions by the external mind (Ogle 2007) and informal agentic interaction. However;

Unless people believe that they can produce desired effects by their actions, they have little incentive to act or to persevere in the face of difficulty (Bandura 1999, 10).

3.3.3 Organisational Characteristics

Generally, organisational characteristics relate to the internal context of the organisation, with the organisational structure or management influencing these characteristics or factors thus having a critical impact on organically generated creativity and innovation. Characteristics relevant to creativity and innovation covered in this section are culture, emergent properties, knowledge management, and organisational learning.

3.3.3.1 Culture

Culture is an abstraction, yet the forces that are created in social and organisational situations deriving from culture are powerful because they operate outside of our awareness ... the concept of culture helps to explain these forces and to normalize them (Schein 2010, 7-9.)

Personal as well as organisational belief structures that drive replication and incorporation influence motivational factors that encourage the sharing of knowledge within organisations (Schein 2010). Five independent dimensions of national culture have been identified. These are “power distance, individualism or (collectivism), masculinity (or femininity), long-term orientation or (short-term) and uncertainty avoidance” (Hofstede 1993, 89). These structures also influence knowledge creation and sharing within organisations. Organisational belief structures take the form of

standards, rules and recognized practices referred to as the organisational culture (Szulanski 1996; Whelan 2015). As Hofstede notes:

The meaning of management differs to a larger or smaller extent from one country to another and it takes considerable historical and cultural insight into local conditions to understand its processes, philosophies and problems (1993, 89).

A distinction between organisational climate and culture is important. Climate is perceived as different from culture reflecting a situation at a point in time thus linking climate to agentic behaviours. Culture is an advanced perspective with entrenched specific situations making culture more permanent in nature (King 2007). Climate is the mutual observation and sense making attached by agents to organisational policies and ways of operating including behaviours that are encouraged and rewarded by management (Schneider, Ehrhart, and Macey 2013). Climate is seen as important for creativity and innovation potentially increasing agentic creativity resulting from an increasingly focused “organisational innovation climate” (Yu, Yu, and Yu 2013, 152). Climate thus emerges from agentic interaction and communication (Schneider, Ehrhart, and Macey 2013), with agents more affected by climate when creativity is organically generated (Yu, Yu, and Yu 2013).

Organisational culture can either foster or hinder knowledge activities thereby controlling knowledge related behaviour within organisations (Ribiere and Sitar 2003), determining the quantity and quality of knowledge shared (King 2007). Organisational culture as noted above is more permanent in nature and susceptible to change through influence (King 2007), making trust (Hinds and Pfeffer 2003, 15), openness, and acceptance for uncertainty (Leonard 2011, 272) as some of the more important aspects affecting knowledge creation and sharing. Organisational management should therefore focus on understanding internal culture to leverage it effectively for competitive advantage (Schneider, Ehrhart, and Macey 2013). However;

The meaning of management differs to a larger or smaller extent from one country to another and it takes considerable historical and cultural insight

into local conditions to understand its processes, philosophies, and problems (Hofstede 1993, 89).

Organisational culture also shapes assumptions on knowledge, facilitating relationships and interactions thereby putting in place procedures that influence the creation and distribution of knowledge within the organisation (De Long and Fahey 2000). Organisational attitudes and culture affect the tendency of individuals to take risks and their willingness to partake in knowledge creation within the organisation with culture influencing role clarity where situations are ambiguous (King 2007).

3.3.3.2 Emergent Properties

By enabling dynamic processes driven by emergent properties, complexity within an organisational system can potentially be explained (Parker et al 2016). Emergent properties are new properties that crystallise or emerge from interactions between organisational components that are not present in the separate interacting components (Capra and Luisi 2014; Case 2015; Uhl-Bien, Marion, and McKelvey 2007). Interactions of different complexity can be at the agentic level or the agentic and organisational level. Consequently, emergent properties have a synergistic influence on a system.

Self-organisation in dynamic processes can result in autocatalysis or emergent properties that enable or speed up actions (Bak, Tang, and Wiesenfeld 1987; Chiles, Meyer, and Hench 2004; Kauffman 1993; Prehofer and Bettstetter 2005; Uhl-Bien and Marion 2009; Case 2015) or far-from-equilibrium energy dissipation (Lichtenstein and Plowman 2009) resulting in adaptive change (Hazy, Goldstein, and Lichtenstein 2007). Emergent properties also result from instability at the coarse-grain or organisational level (Hazy and Uhl-Bien 2015) that is, a sudden unpredictable change event generated through fine-grain level interactions (Hazy and Uhl-Bien 2015), and energetic pressure of agents (Marion 2008). Emergent properties provide explanatory mechanisms for manifested change events (Case 2015; Marion 2008). Such mechanisms are seen as fundamental to information flows within organisations (Marion et al 2016), facilitating recognisable patterns across diverse situations thus providing answers when specific causes and effects are not identifiable (Elster 1998).

Potentially, six categories that is, “attractors, storytelling, bonding, attention patterning, elaboration, and conflicting constraint” can be used to group and explain mechanisms (Bright 2011, ii). These categories are important to foster adaptability, creativity, and innovation within an organisation (Bright 2011). In the process of interacting, agents potentially resonate (Marion and Uhl-Bien 2001), fostering bonding, and aggregation allowing agents to change their views to conform to a group common inter-resonance structure (Marion 2008). Resonance results from the behaviour of two or more interdependent agents acting dependently (Uhl-Bien, Marion, and McKelvey 2007) to realise a shared need (Uhl-Bien and Marion 2009).

Interacting agents also exhibit rich dynamic properties (Shinbrot 1994; Smiraglia and van den Heuvel 2013) that when synchronised with others produce a much higher order system (Nowak, Vallacher, and Zochowski 2005) exhibiting emergent properties (Capra and Luisi 2014; Case 2015; Uhl-Bien, Marion, and McKelvey 2007). Synchronisation results from modifying thoughts, feelings, and or action tendencies that over time promotes coordination in mutual experience for interacting individuals (Nowak, Vallacher, and Zochowski 2005; Vallacher and Nowak 1998).

Although vastly different, through interactions, resonance and synchronisation resemble similar processes, where resonance is a “forced” change in behaviour of interdependent agents with behaviour reverting to original state once the interaction ceases. Synchronisation is a “complex dynamical process” where independent agents continue to change and match their behaviour (Pikovsky, Rosenblum, and Kurths 2003, 15-17).

3.3.3.3 Knowledge Management

Succinctly, knowledge management is doing whatever is required to make productive and effective use of an organisations knowledge sources and resources (Becerra-Fernandez and Sabherwal 2015).

In the current global environment, “knowledge workers” and their “productivity” are more valuable than organisational “production” assets (Drucker 1999, 79). Thus, an organisations ability to manage knowledge becomes a core competence for sustaining long-term competitive advantage (Alavi and Leidner 2001; Zack 1999b)

with an increase in knowledge held likely to lead to increased organisational learning (Adegbesan 2009; Cohen and Levinthal 1990), creativity and innovation. To enable timely resolution to issues with significant uncertainty, knowledge within organisations also needs to be widely distributed (Fahey and Prusak 1998) and managed, with knowledge management increasingly seen to promote the “creation, sharing and leveraging” of organisational knowledge (Becerra-Fernandez and Sabherwal 2015, 4).

Potentially, organisational knowledge is dynamic and constantly evolving whereby current innovative knowledge ultimately becomes indispensable (Zack 1999). This makes the productive use of existing knowledge to achieve organisational goals critical and requires effective knowledge management (Uit Beijerse 2000) that fosters knowledge internalisation by agents (Yu, Yu, and Yu 2013). Organisationally, this is seen as an essential risk management strategy allowing vital knowledge sharing, minimising risk of knowledge loss (Moitra and Kumar 2007) and building redundancy within the organisation (Nonaka 1991).

Knowledge management represents a continuing progression through recurring dynamic complex interactions (McAdam and Reid 2000) making it a powerful social process that primarily takes human and social factors into consideration (Mason and Pauleen 2003). It is an emergent process, fundamentally interconnected to organisational social and learning activities (McAdam and Reid 2000), with four significant elements (Kalkan 2008) that take the form of creation, realization, communication, and practice (Demarest 1997; McAdam and McCreedy 1999; Perez and de Pablos 2003; Uit Beijerse 1999). Creation includes socially constructed knowledge (McAdam and Reid 2000) incorporating inorganically acquired and organically generated knowledge. With, knowledge codified, communicated, operationalized, and made tangible through organisational and social interactions to achieve organisational goals (Kalkan 2008).

Within diverse global organisations, knowledge management faces six main challenges that involve context, tacitness, technology, diversity and human resource strategies, suitable management structures, as well as inherent complexities of globalisation (Kalkan 2008). Due to uncertainty and the dynamic nature of

knowledge, knowledge management within global organisations results in creativity that operates at the “edge of chaos” (Torugsa and O’Donohue 2016, 1612). That is, creativity results from systems operating between stability and instability or between predictability and unpredictability (Fullan 2014), thus, exhibiting tension, and attractor dynamics between these two extremes.

Organisations with a focus on knowledge management often treat tacit knowledge as valuable fostering interactions and relationships to create, improve, and share tacit knowledge. Thus, they increasingly develop and utilize social capital from repeated agentic interactions to construct organisational intellectual capital (Nahapiet and Ghoshal 1998) with new cultures, forms, and reward systems implemented to enhance such social relationships (Quinn, Anderson, and Finkelstein 1996; Hung et al 2011).

Tacit knowledge is strategically valuable, context, and experience specific and rooted in complex organisational dynamics (Linderman, Pesut, and Disch 2015). Being context specific, unique, difficult to imitate and acquire in a readily useable form makes tacit knowledge valuable. Other organisations would have to relive similar experiences to acquire the same knowledge thus requiring considerable investment in time and resources (Zack 1999).

3.3.3.4 Organisational Learning

Effects of learning across diverse individuals are identification and thoroughness of information, sharing, development, understanding, and interpretation of knowledge (King and Ko 2001). Learning is a process used to detect and correct mistakes (Argyris 1976; Peeters and Robinson 2015) whereby the lack of either or both inhibits learning. The need for learning also intensifies in uncertain and dynamic environments, thus increasing the complexity of making organisational learning effective and efficient (Argyris 1976). To address such challenges within organisations, altering two important variables can allow effective decision-making that is, the timeliness of information and receptivity to corrective feedback (Argyris 1976; Peeters and Robinson 2015). Corrective actions can occur through single-loop or double-loop feedback and learning systems.

Concepts of single-loop and double-loop learning play a crucial role in determining how learning occurs within an organisational context. Single-loop learning transpires in isolation when agents undertake corrective action around constraining pre-set variables. Whereas double-loop learning occurs when agents reflexively question pre-set variables and take unconstrained corrective action (Argyris 1977, 1976, 1976b). As long as primary organisational goals, behaviours, and activities are unchallenged, supporting and encouraging learning results in single-loop learning (Argyris 1976). Double-loop learning occurs through challenging and changing primary organisational goals, behaviours, and activities (Argyris 1977; Argyris and Schön 1996) making the organisation more adaptive. Single-loop learning is evolutionary or “self-sealing” in nature where the organisation is generally slow at responding to changes whereas double-loop learning is revolutionary in nature with the organisation being transformed (Argyris 2003, 1184; Drew & Smith 1995).

Organisations within the natural resources sector seek to value add to a commodity that characteristically is homogenous in nature making product differentiation difficult. This makes organisations within the sector highly sensitive to price competitiveness thereby making cost effectiveness rather than product differentiation a priority (Sharpe and Long 2012). Without identifying and addressing knowledge and learning gaps, organisational knowledge weakens resulting in suboptimal decisions (Fahey and Prusak 1998) and a loss of value adding innovation. Consequently, by addressing knowledge and learning gaps, an organisation is better able to effectively integrate organisational knowledge (Yahyapour, Shamizanjani, and Mosakhani 2015) thus forcing the organisation into a state of equilibrium (Osborn and Hunt 2007) potentially creating opportunities for innovation to foster.

Three methods to achieve creativity are highlighted namely “serendipity, similarity, and mediation” (Mednick 1962, 221). These methods attain creative solutions by combining required “associative” components, with the more associations an individual is able to make with existing problems the better the chances of creating “mediating bridges” through combination of elements potentially resulting in creative solutions (Mednick 1962, 224). Thus, associative learning is also seen as tacit learning as it is deeply rooted in experience (Zohar 1997, 35). It is an individual’s ability to create associations between events (Mitchell, Houwer, and

Lovibond 2009) in the process developing knowledge by establishing links between their current situation and prior experience, consequently enhancing learning through recorded memory (Cohen & Levinthal 1990; Rosas, Todd, and Bouton 2013).

Organisational learning and knowledge management is critical in fostering innovative behaviour, as significant individual intellectual capacity is required to understand unfamiliar concepts from the external environment (Kang and Lee 2016). Critical organisational task specific knowledge can only be acquired by experience from within the organisation (Cohen & Levinthal 1990) as agents may exercise skills that involve a significant element of tacit knowledge that can limit organisational capacity to assimilate applied skills (Nelson & Winter 1982, 125).

Tacit knowledge can also allow agents to create previously unconsidered links and associations to challenges, resulting in creativity. Consequently, the essence of expertise lies in knowing how to create these links and associations (Linderman, Pesut, and Disch 2015). Within an organisation, codification of tacit knowledge can result through motivation or coercion of agents as well as recognition and reward systems, thus increasing creative capacity and allowing for learning to assimilate making diversity of knowledge critical (Burnard 2014; Kang and Lee 2016). Developing creative capacity requires exposure to prior knowledge therefore knowledge management and accessing tacit knowledge are critical in addition to the need for application and effort (Cohen & Levinthal 1990).

The initial step towards creating a learning organisation is through increasing organisational adaptiveness. Organisations focused on creating new products and services apply generative learning whereas adaptive learning applies to organisations that are managing and surviving through current products and services (Waddell and Pio 2015). Generative learning is a paradigm shift; it involves considering current products, systems, processes, and activities differently to improve and meet unacknowledged customer requirements. Failing to detect the causes of challenges forces organisations to “push on symptoms rather than eliminate causes” resulting in adaptive learning (Senge 1990, 8).

From an agentic perspective, organisational agents can be adaptive if their actions are value attributed with agentic behaviour increasing that value over time (Holland and Miller 1991). Consequently, to attract and retain talented people, organisations have to create and perpetually refine employee value propositions as well as develop these employees' further (Chambers et al 1998). A critical review of existing literature on organisational learning by Wang and Ahmed highlights that

...Organisational learning is not simply a collectivity of individual learning processes, but engages interaction between individuals in the organisation, and interaction between organisation as an entity, and interaction between the organisation and its contexts...(Wang and Ahmed 2003, 15)

Returns on training investments can be unclear due to downturns, reorganisations, and cutbacks resulting in organisational learning programs being discontinued (Dieckhoff 2013; Drew & Smith 1995). In order for an organisation to sustain its competitive advantage, a strategic focus on creativity and innovation needs to be included within organisational learning frameworks (Hsu and Fang 2009; Wang and Ahmed 2003).

3.3.4 Adaptive Leadership

A basic assumption underlying complex systems is that organisational problems are too complex and generally not solved just through rational thinking (Kauffman 1993). These complex problems are seen as an outcome of organisations having been conditioned to “satisfice” rather than “optimize” their operations, thereby finding sub-optimal solutions to complex problems (Simon 1956, 129).

Tackling organisational challenges also triggers flexibility through changes in knowledge, action, and behaviour (Lichtenstein et al 2006). These challenges are systemic affecting long-term organisational feasibility. Thus requiring creativity, innovation, and changes in agentic behaviour, as solutions for such challenges lie in the collective tacit skills and knowledge of employees (Heifetz and Laurie 2001). These challenges also require new learning, discoveries, and modes of operating making them non-compliant to working within standard operating procedures or leadership orders (Uhl-Bien, Marion, and McKelvey 2007). The fundamental insight

of adaptive leadership is that it recognises the relational nature of interactions and its importance for change within an organisational context. A change movement emerges nonlinearly through a process of exploration, discovery, and adjustment from agentic interactions, resulting in adaptive outcomes (Uhl-Bien, Marion, and McKelvey 2007).) It has been stated that:

...The essence of man is by beginning neither with the individual nor with the collectivity, but only with the reality of the mutual relation between man and man that this essence can be grasped ... (Buber 1947, X)

Buber (1947, X) thus alludes that essence of relationships can only be understood through understanding interactions between individuals. Thus, change within a relationship or organisation more specifically emerges, from the “space between” that is, the self *I* and other person *YOU* within interactions are inseparable (Bradbury and Lichtenstein 2000, 551; Buber 1970). This leads to inquiry into relationships and the nature of interactions taking place within organisations (Uhl-Bien, Marion, and McKelvey 2007).

Complex systems leadership describes and discusses three functions of leadership that is, administrative, adaptive, and enabling leadership. Administrative leadership is seen to address organisational and administrative functionality; Adaptive leadership is seen to occur within informal intentional exchanges of mutually dependent agents that generates emergent, productive organisational outcomes whilst, enabling leadership is seen as leadership that interfaces administrative and adaptive leadership (Mendes et al 2016; Osborn and Hunt 2007; Uhl-Bien and Marion 2009). With a research emphasis on operationalizing adaptive leadership, this literature review has predominantly focused on the adaptive leadership element of complexity leadership.

Adaptive leadership is seen as a collaborative experience through which agentic understanding, actions, and behaviours transform, (Plowman and Duchon 2007), encouraging and mobilising agents to handle harsh challenges, to flourish and routinely go beyond their formal job descriptions (Heifetz, Grashow, and Linsky 2009). Thus resulting in functional participation, that organisations can rely on to

operate more effectively (Bolino, Turnley, and Bloodgood 2002) thereby, catalysing the organisation into becoming more adaptive.

Identity and tension are two main drivers of adaptive leadership. The formation of a new identity occurs over time when mutually interacting agents define a joint social identity through tension changing how existing rules govern these agents (Lichtenstein et al 2006). The arrows in Figure 3.1 illustrate that tension within an organisational context potentially exists between the three characteristic types discussed and consequently how these affect creativity and innovation.

The process of defining a joint social identity occurs when agents envision organisational issues that require creativity, innovation, or behaviour change and in order to address these challenges, agents engage proactively or reactively in interactive behaviours (Hatch and Cunliffe 2013). In the process of interacting, agents may also experience tension resulting from contrasting views from other interacting agents thereby challenging their current understanding of issues, forcing a change in views to accommodate new perspectives, thus mitigating disagreement between the different views (Marion and Uhl-Bien 2001). Adaptive leadership is said to have emerged when innovation and positive change results from such tension (Lichtenstein et al 2006).

However, due to the prevalence of transient social capital and increased use of outsourced contractors and consultants within the study sector, it is envisaged that over time building a joint social identity becomes challenging, as social capital is a reflection of the presence of direct personal relationships amongst people within the organisation (Chang and Chuang 2011). By understanding impacts of adaptive leadership on intellectual capital management and social capital, organisations can introduce improved intellectual capital management strategies to retain social capital thus mitigating collective corporate intelligence erosion as:

The attraction and retention of talent in the knowledge economy will likely be more salient issues than downsizing and restructuring (Dess and Shaw 2001, 447).

3.3.5 Opportunities for Research

Uncertainty and turbulence surrounds the postmodern knowledge economy resulting from advances in technology and economic globalisation. This results in constant dynamic change, reduced productivity and challenges (Cabrita and Bontis 2008; Hitt 1998), with organisations increasingly viewed as “complex, networked, emotional, and chaotic” (Prewitt 2004, 328).

Gaps in reviewed literature highlight issues that affect organisational sustainability with reviewed literature suggesting that a strong link potentially exists between aspects of complexity leadership theory and intellectual capital management. Such as; how does complexity leadership affect innovation and learning (Mendes et al 2016), what influences the creation of social capital (Allen et al 2016), how does system level self-organisation lead to innovation (Corral de Zubielqui, Jones, and Statsenko 2016), what are the direct or indirect relationships between interactions, knowledge processes, and competitive advantage (Borzillo and Kaminska-Labbé 2011), what is the impact of various mechanisms and how can it be measured (Surie and Hazy 2006), what is the requirement to enable social interactions as an articulated process as well as establish this process as an essential component for managing knowledge (Hofhuis, Rijt, and Vlug 2016; Moitra and Kumar 2007) and how do different aspects of knowledge management challenges within global businesses impact organisational life (Kalkan 2008).

This research addresses the potential key link between aspects of complexity leadership theory and intellectual capital management that affects organisational sustainability by investigating and addressing the question

How can Adaptive Leadership leverage on intellectual capital management to positively impact on social capital, creativity, and innovation?

The next chapter describes the methodological approach undertaken to address this question.

4 Chapter Four: Research Methodology and Context

4.1 Introduction

This chapter is arranged in four sections. Section 4.1 details the research approach. Section 4.2 details the process for gaining access to the research organisation. Section 4.3 considers ethical issues relating to this research and details how these are addressed and Section 4.4 discusses the process of data collection and evolution of themes.

The purpose of this study is to investigate the process of operationalizing Adaptive Leadership using Complexity Leadership Theory principles and its consequent impact on intellectual capital management and social capital of organisations within the resources sector.

This chapter explains the methodological choices made which assisted in addressing a key issue affecting organisational sustainability:

How can Adaptive Leadership leverage on intellectual capital management to positively impact on social capital, innovation, and creativity?

This research was guided by and aimed to achieve the following objectives

1. Investigate how adaptive leadership is operationalized in the resource sector.
2. Explore how creativity and innovation are generated internally from informal agentic interaction.
3. Gain insights into how system level self-organisation emerges from informal agentic interaction.
4. Understand the impact of operationalizing adaptive leadership on organisational social capital particularly transient social capital.
5. Examine how adaptive leadership can influence social capital especially transient social capital.

This research focused on the resources sector, which is a dynamic, evolving, and fluid environment with the research question seeking to understand how adaptive

leadership can be operationalized in such environments. Guba (1994, 107) states that researchers approach their research with a basic set of beliefs and assumptions that guide their inquiry. Cresswell (2013, 19) explains and discusses that there are four philosophical assumptions central to good qualitative research studies. These are the ontological issue or multiple nature of reality, epistemological assumption or the close relationship of the researcher to that being researched, the axiological assumption, or value-laden aspect of inquiry as well as the personal approach to writing the narrative and methodological or the emerging inductive methodology of the process of research (Cresswell 2013, 20).

Saunders, Lewis, and Thornhill (2009) approach to research methodology was adapted for this research. This methodology is summarised in Figure 4.1 and discussed in more detail under philosophy and approach, strategy, time horizons, techniques and procedures.

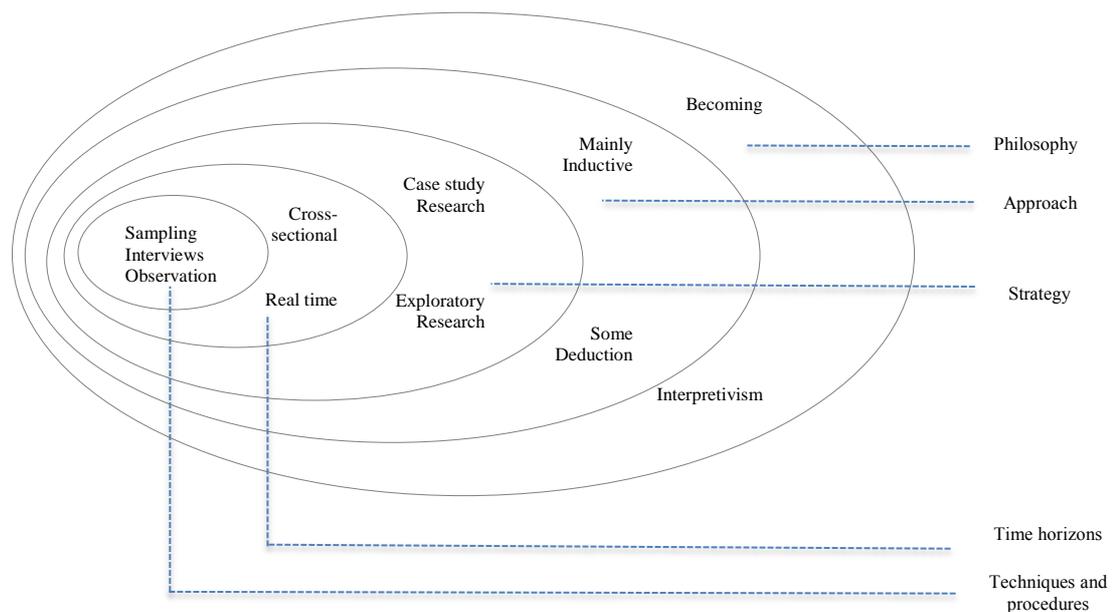


Figure 4.1: Research Methodology
(Adapted: Saunders, Lewis, and Thornhill 2009, 108)

4.1.1 Philosophy and Approach

A theoretical perspective of symbolic interpretivism was utilised allowing the actions of others to be interpreted in order to develop new meaning and understanding within a constructivist ontological view as the research is about understanding and interpreting real-life situations (Saunders, Lewis, and Thornhill 2009, 116). Hatch

and Cunliffe (2006, 15) explain that knowledge is viewed as being relative to the knower under symbolic interpretivism whereby subjective awareness and individual meaning becomes the path towards understanding organisations by studying “symbols, artifacts and language” within the organisational context. It is recognised that the constructivist view is different from a constructionist view however, in the literature, these two terms are “often used interchangeably” (Maréchal 2012, 2).

Hatch and Cunliffe (2006, 179) argue that a social constructionists approach suggests that agents construct their realities by narration. The philosophy of narrative epistemology results from individual narratives that give meaning to and mould lives and it is through the listening and telling of stories to one another that humans develop knowledge. This study involved understanding interactions between organisational agents. Using an interpretive epistemology allowed this researcher to create knowledge and understand it from the point of view of the individuals, who live and work in that particular culture or organisation by using inductive modes which involved developing theory from practice (Hatch and Cunliffe 2013, 11; Saunders, Lewis, and Thornhill 2009, 126).

Learning the context and understanding the complexities of the business environment is essential (Saunders, Lewis, and Thornhill 2009, 150) therefore, having existing knowledge of the resource sector as well as ongoing relationships with senior management and staff being interviewed greatly assisted in reducing and managing knowledge gaps. Care was taken to ensure that impartiality was maintained and that familiarity did not negatively influence data collection and views by actively applying reflexivity during the interview process as well as after each interview was conducted. The process of reflexivity undertaken is discussed in more detail later in this chapter in Section 4.4.1.1.4 Reflexivity.

4.1.2 Strategy

An embedded case study strategy with a cross sectional approach was applied within this research. An embedded case study strategy involves investigating a specific topic of interest occurring in its actual environment using multiple sources of evidence (Purcell, Horn, and Palmer 2007).

Multiple sources are used to establish whether the findings of the first source occur in other sources allowing us to generalise from these findings (Saunders, Lewis, and Thornhill 2009, 146). This strategy was seen as appropriate because different departments within the mid to low-tier resource organisation being studied would ensure multiple sources were canvassed. The organisation structure and social capital was studied using a macro, micro, and meso perspective (Bies et al 2007) and progressively working through these perspectives led to the development of an understanding of the organisational dynamics and interactions taking place.

A number of qualitative data collection methods have been identified and discussed by Marshall and Rossman (2011) who state that data should be gathered and collected from

1. within the organisational setting being researched and studied. This will allow the researcher to experience reality as the participant does,
2. directly observing, noting and recording events, behaviours and observable objects,
3. reviewing and analysing existing organisational documents, and
4. undertaking in-depth interviews of subjects.

For this research, data collection methods (1) and (4) identified by Marshall and Rossman (2011) were applied. These were seen as appropriate data collection methods for the research question and objectives.

4.1.3 Time Horizons

A cross sectional study approach is used to understand and describe how the phenomenon interrelates to different departments within the same organisation at a specific point in time (Saunders, Lewis, and Thornhill 2009, 155).

4.1.4 Techniques and Procedures

Pratt (2009, 856) discusses that qualitative research is useful for addressing the “how” questions rather than the “how many” questions and for understanding the world from the perspectives of informants as what is happening within the study is created by the actions of subjects. With this in mind, primary data collection in the

form of in-depth one-on-one interviews was utilised to understand the nature of interactions necessary for creativity and innovation to exist. Questions such as “*Can you describe the nature of interactions between the different individuals?*” or “*What conditions do you believe are necessary for creativity and innovation to be generated?*” were put to respondents to gain an understanding of the dynamics that are taking place within the organisation.

The target population for this study was the professional or semi-professional level as this tier was seen to be highly mobile with a transportable qualifications and skills base that allows them to move easily between organisations and sectors. Professionals also have different motivational drivers and regard training, career progression, as well as the ability to interact freely to be more valuable than monetary gain (Robbins et al 2013). To understand the interactions and views on creativity and innovation as well as the organisational context, it was expected that at least 10-20 interviews at a junior to senior managerial level would be conducted or until saturation was achieved (Hilger 2007). Guest, Bunce and Johnson (2006, 65) state that saturation is the point where “new information produces little or no change” to the data.

The participant profile for this research as presented in Table 4.1 was the professional or semi-professional tier. This participant profile and group can be seen as “homogenous” within a similar age band and tenure (Saunders, Lewis, and Thornhill 2009, 240), sharing “common experiences and truth” (Guest, Bunce and Johnson 2006, 75) within the research organisation. Guest, Bunce and Johnson (2006, 76) further state that a sample size of 12 is likely sufficient to achieve saturation when the objective of the research is to identify and explain a shared observation, opinion, or conduct amongst a “relatively homogeneous group.” In the context of this research organisation, the final number of interviews conducted to achieve saturation was 13 interviews at a junior to senior managerial level.

A predetermined set of forty-five questions as set out in Appendix 4 was presented sequentially to interview participants. These questions were designed to flow through with some questions only presented depending on the individual’s response to a prior question for example,

17. Please provide examples of recent innovation within the department? If no recent innovation then ... (Q18 only asked if response to Q17 is negative)
18. ... Please elaborate on why you think no innovation is taking place.
19. If innovation then please describe how the initial concept of the innovation arose? Was this an individual or group innovation? (Q19-Q21 only asked if response to Q17 is positive)
20. Can you describe the interactions between the different individuals working on the innovation?
21. Is this innovation a “one-off”?

NVivo[®] was utilised as a data management tool to gather, explore, and understand data collected by using an inductive approach. Data were analysed using grounded research (Whiteley 2004) approaches to constant comparison of data to identify key themes. Analysis commenced after the first interview was completed and was undertaken concurrently with the data collection process (Suddaby 2006).

Analysing the collected data in a sequence also allows further data gathering to be guided by the analysis undertaken (Becker 1958). Glaser and Strauss (2012, 102) refer to this as the “constant comparative method of joint coding and analysis” and explain further that this offers, “continuous development throughout the analysis until the analysis is terminated” (2012, 105). Therefore, in order to understand the collected data, conversations taking place and responses received, this researcher transcribed two of the initial interviews.

This allowed a general understanding of the themes coming through as well as provided an opportunity to develop further the questions to be asked and the interviewing style to be refined. Transcription of remaining interviews was outsourced to a professional transcriptionist allowing the researcher to focus on analysing the collected data. Theoretical sampling as well as reflexivity assisted in guiding and refining the scope of ongoing data collection as determined by the theory under construction (Suddaby 2006). The process of reflexivity is covered in more detail in this chapter in Section 4.4.1.1.4 Reflexivity.

Adams (2010) suggests that a researcher should be non-judgemental, remaining professional throughout the interview by managing their personal emotional responses to participant responses. This helps ensure that the interviewee does not shut down or terminate the interview prematurely. By being critical to any responses received, a researcher can create situations whereby a participant may become uncooperative and refuse to proceed with the interview.

This was particularly relevant in one interview where the participant was very negative about all the questions posed as well as the organisational environment in general. Emotional restraint was therefore required from the researcher to ensure that rather than the responses negatively affecting and demotivating this researcher, the participants' responses were instead used to further probe into the area in question, resulting in some very different insights. The research design is summarised in Figure 4.2.

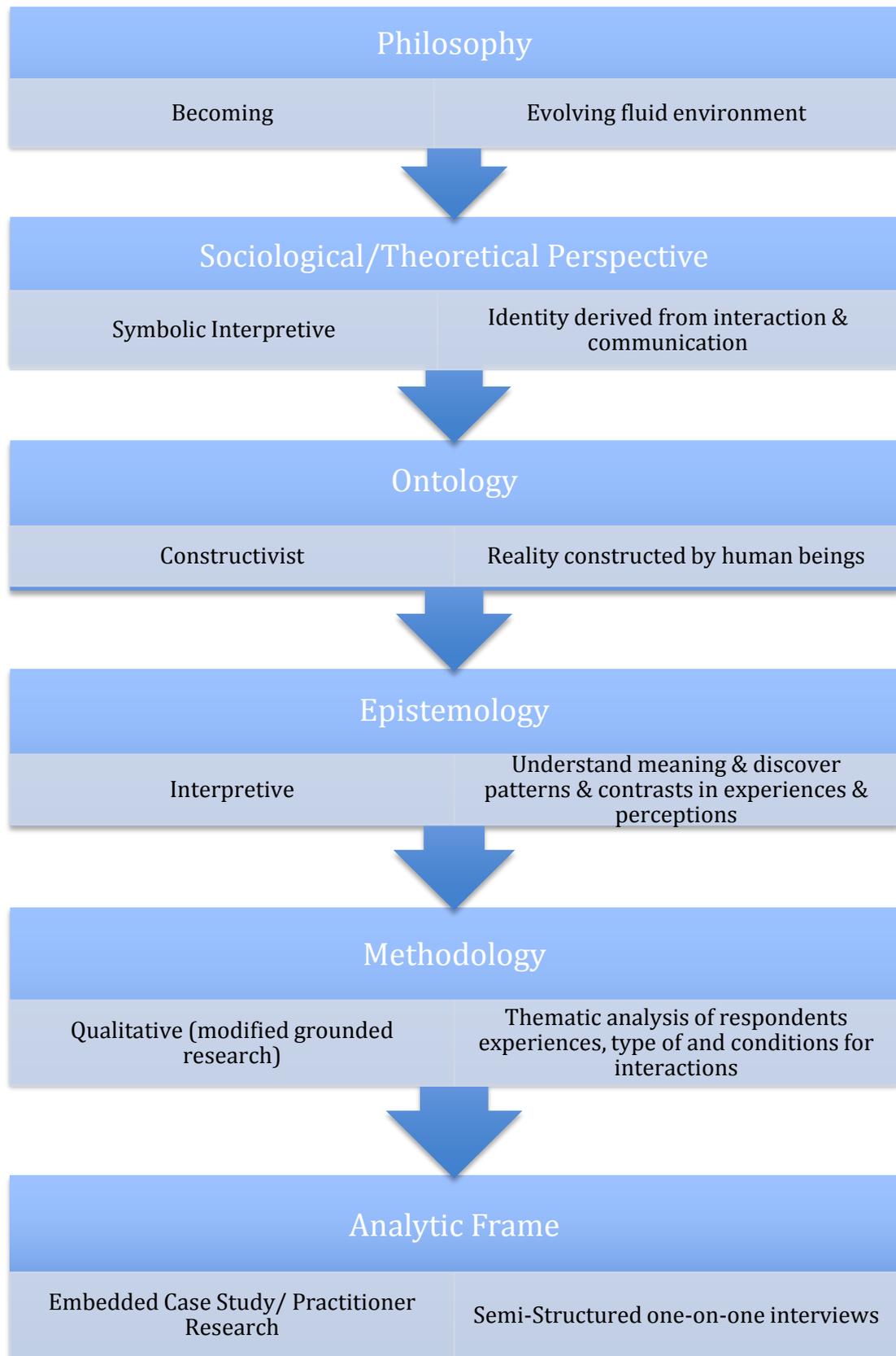


Figure 4.2: The Research Design
 (Adapted Saunders, Lewis, and Thornhill 2009, 138)

4.2 Process for Gaining Access

Initially various organisations other than this researcher's own organisation were approached to gain access for this study. However, great difficulty was experienced in gaining access to organisations within the resource sector for data collection, which was the focus for this research. Difficulty may have resulted due to this researcher's position working for a competing organisation within the industry thus making other resource organisations reluctant to discuss potential challenges that they may be experiencing.

It was also envisaged that access would be granted within this researchers own organisation. However, a senior manager verbally declined the access request. The manager stated that the organisation was not mature enough and would most likely produce unreliable data for the study. Two other organisations verbally declined the access request stating that due to internal issues they had recently subjected their staff to enough scrutiny and questioning.

Assistance was sought from the Chamber of Minerals and Energy (CME) to forward the access request to member organisations thereby inviting organisations interested in the research to contact the researcher. The CME also initially declined stating that they did not participate in forwarding research requests to member organisations. However, the CME subsequently agreed to on forward the request but with no follow-up response received from the CME or its participating members.

This researcher's own organisation finally agreed to participate in the study with a senior member of the executive team verbally commenting that this research would greatly benefit the organisation. As a result, this research became a practitioner researcher project (Saunders, Lewis, and Thornhill 2009, 150; Yin 2003, 94). Yin (2003) further discusses that a practitioner research project provides a unique opportunity to observe reality from an insider's viewpoint rather than an outsiders thereby making such a viewpoint instrumental in producing an accurate representation of reality.

An initial invitation email was sent to 16 prospective participants from one particular department within the organisation with a response rate of 13 per cent (2 responses

out of 16 invites). In order to garner support for the study, this researcher walked around the department discussing and highlighting the importance of the study face to face with individuals. This was received favourably with participants commenting that they initially assumed the email was just spam and ignored it. Whilst another stated that, it is the human face, which made them decide to assist. One particular participant commented that they did not feel that their contribution to the study would be valid or have any value hence did not respond. Interestingly, this particular participant's view proved to be highly insightful to the study.

In order to support data collection from multiple participants, another senior member of the executive team was approached requesting department study access. This second request was received favourably. The original invitation email was modified slightly to include less detail about the study in the body of the email but with detailed information attached in the email describing the study for participants who were interested in taking part. The response rate from this email was much more favourable of 24 per cent (11 responses out of 45 invites.)

Throughout the study, this researcher held a professional position within the research organisation with no direct line reports supervision responsibility. Having held this position for almost seven years, this researcher has visibility of organisational business strategies, production, and processing strategies and financial decisions and outcomes resulting from strategies employed. This researcher's current role within the organisation relates to evaluating and analysing financial outcomes of different strategies over the life of the mined resource with no overall position of authority.

Within this research project, this research undertook a number of steps to ensure that bias was minimised during data collection. These steps were guided by the field procedures as recommended by Yin (2003).

1. Invitation was sent to two whole departments inviting participation in the research.
2. In order to canvass all possible views, all interested participants were interviewed regardless of their position within the departments and organisation.

3. No interested participant was rejected from taking part in the research.
4. Social conversation in the interviews was minimised.
5. Reflexivity by the researcher was actively used throughout the data collection process to minimise bias.
6. Post-interview notes were written to identify areas of improvement within the data collection process. This was applied to subsequent interviews.

4.3 Ethical issues

Saunders, Lewis, and Thornhill (2009, 183) define ethics as the appropriateness of behaviour in relation to the rights of the research subjects. Further, stating that it is how we formulate and clarify our research topic, design our research and gain access, collect data, process and store our data, analyse the data and report our findings in a moral and responsible manner (Saunders, Lewis, and Thornhill 2009, 183).

As this research project involved human interaction and the collection of confidential, sensitive data, approval was sought from the Human Research Ethics Committee of Curtin University (Application for ethical approval of a research project involving humans (Form C). 2010). Due consideration was given to the guidelines set out by the NHMRC (Australian Code for the Responsible Conduct of Research. 2010).

Responsibilities of researchers include maintenance of high standards of responsible research and reporting, respect for research participants and the environment, as well as reporting research misconduct. Saunders, Lewis, and Thornhill (2009, 185) cover other ethical issues that were also identified for this research. These are; accuracy of reporting, safeguarding of data, privacy of participants, voluntary nature of participation, consent of participants, confidentiality, anonymity if requested and pain and discomfort free participation. These were covered by the Ethics approval to conduct this research.

Care was taken to ensure anonymity of data collected from the organisation and individual participants, which were generically replaced with “[xxx]” within the quote thereby de-identifying names and places. Participants were advised of the

process of collection and retention of data. Additionally, participants were given the choice to withdraw from participation at any time without negative repercussions.

4.4 Data Collection

In order to understand and experience reality as perceived by the individual subjects during their tenure with the organisation as well as their career to date, interviewing was selected as the most convenient method of data collection for this research. Interviewing is normally about a set topic, which does not produce objective or quantifiable data, it has a clear purpose, and structure rather than being just a spontaneous exchange of views (Adams 2010).

Nunkoosing (2005, 699) further discusses that interviews are conducted when we want to know something about what another person has to say about their experience of a defining event, person, idea, or thing. The interview invites, persuading the interviewee to participate in a dialog about their desires, aspirations, hopes, opinions, and experiences at both a cognizant and incognizant level.

For this research, a semi structured interview format was utilised. This is the most widely used format for qualitative research as it facilitates proper dialogue between the researcher and the subject. It also allows the researcher if appropriate, to guide the study into areas that are relevant to the research topic as well as other areas which the interviewee expresses a desire to discuss. Interviews can be seen as an intersubjective conversation that takes place between two subjects talking about and allowing “common themes of interest” to emerge (Kvale 1996, 183; Morley 2007, xx). Becker (1958) posits that responses offered by participants within intersubjective conversations are less likely to reflect their concerns and prejudices than responses to direct questions posed by the researcher that may result in encouraging a particular response. Thus, this approach was seen as providing participants with the opportunity to express a range of views and opinions in response to the interview questions.

Respondents were interviewed from within two participating departments between the years 2013 and 2014. All but one response was from a mid-to-senior level position. Participant tenure ranges from two years to six years and is reflective of the

age of the organisation. Table 4.1 summarises the participant profile by position and department.

Table 4.1: Participant Profile

Department	No.	Position	Gender	Age Band (Years)	Tenure (Years)	Generation Type
A	1	Mid Senior	Female	35-45	5-6	X
A	3	Mid Senior	Male	40-50	4-5	X
A	1	Junior	Male	40-50	2	X
B	3	Mid Senior	Female	35-45	5-6	X
B	3	Mid Senior	Male	35-45	2	X
B	2	Manager	Male	40-50	2-6	X

Prior to commencing the interviews, a Project Information Sheet (Appendix 5) that includes information describing the project aim, project purpose, ethical issues that have been considered as well as confidentiality requirements was given to participants. The information sheet detailed that all data collected for the purposes of the study will be confidential and all information disclosed will be kept anonymous. Becker (1958) states that a participant faces the challenge of defining the researcher, that is whether the researcher is internal and known and therefore what information is withheld in order to avoid future issues for the participant. The confidentiality agreement (Appendix 6) was intended to allay this fear.

Data were collected in the form of face-to-face interviews, transcribed and loaded into NVivo® to enable coding using three processes, these were, “summarising, categorising, and structuring” (Saunders, Lewis, and Thornhill 2009, 490). A process of open, axial, and selective coding using aspects of grounded theory and constant comparison (Suddaby 2006) was systematically undertaken to allow the themes to emerge and evolve.

Constant comparison (Suddaby 2006) was actively used during the interview process to further probe into areas and points of interest that were raised by candidates. Thereby allowing the interview process to be refined as the individual interviews progressed, to draw out and uncover points of view that might otherwise not have been disclosed. Identified themes were then further summarised for presentation into

higher-level themes and mapped using the SimpleMind[®] mind-mapping software. Appendix 2: Summarised Emergent Themes provides some examples.

SimpleMind[®] is a mind-mapping application for organising and understanding complex concepts. For this research, SimpleMind[®] was used to map nodes as identified themes as well as manually facilitate the linking of interrelationships between these nodes. This assisted in visually representing the data that have been collected and analysed.

4.4.1 Analysis Process

This study used a grounded research approach based on Glaser and Strauss's grounded theory (2012). Glaser and Strauss (2012) define grounded theory as theory derived by induction from the study of the subject that it represents. Through methodical data collection and analysis of the data relating to that subject, this theory is discovered, developed, and conditionally confirmed. Grounded theory is particularly helpful for research assisting in predicting and explaining behaviour with an emphasis on developing and building theory (Goulding 2002).

In a grounded research project, the division of data collection and the analysis process is not distinct. Suddaby (2006, 634) discusses "constant comparison" and "theoretical sampling" as the two key concepts underlying grounded theory. Constant comparison or reference to the data is the process where collected data is simultaneously analysed making grounded theory inductive in nature whereas theoretical sampling guides what data is collected next determined by the theory that is under construction. For this research, the researcher personally undertook the transcription of the first two interviews allowing an appreciation and understanding of data being collected. Subsequently, these two transcripts were uploaded into NVivo[®] to assist with the coding process as part of a constant comparison exercise. This led to a deeper understanding of the interview and data collection process leading to changes made to the format of the interview as well as questions being asked whereby more probing questions were asked depending on responses received.

Suddaby (2006, 634) also discusses some misconceptions of grounded theory and warns that both constant comparison and theoretical sampling violate long-standing

positivist assumptions about how a research process should work. Constant comparison is seen as contradicting the myth of clean separation between data collection and analysis whereas theoretical sampling is seen to violate the ideal of hypotheses testing. Suddaby (2006) also cautions that the application of grounded theory is more suited towards understanding how meaning is constructed through intersubjective experience. With Suddaby's cautions in mind, aspects of grounded theory as described by Whiteley (2004) informed the approach to data collection for this research.

Saunders, Lewis, and Thornhill (2009, 509) describe two approaches to qualitative data analysis that is, the deductive and inductive approach. A deductive approach uses existing theory to formulate research questions and objectives. Whereas in applying an inductive approach, data are first collected and then explored for themes or issues to follow up or concentrate on. An inductive approach was applied for this research study in line with the grounded research approach informing data collection.

McCann and Clark (2003) discuss that the intent of coding is to analyse and identify patterns and events from the data. It is the process of defining and systematically recording data by identifying themes or concepts that are contained within the data, with the theory emerging through the coding process thereby linking the data to an emergent theory. The coding process is described and discussed below using aspects of grounded theory as well as qualitative analysis processes classified broadly as open, axial, and selective coding (McCann and Clark 2003) with the codes serving as devices to label, separate, compile and organise the data.

4.4.1.1.1 Open Coding

Open coding also referred to as substantive coding, this is the systematic breaking down of collated data in order to understand and structure the data into categories (McCann and Clark 2003) by condensing lengthy statements into concise statements whereby the key essence of the data is restated in fewer words (Kvale 1996). This process allows a researcher to become familiar with the principal themes within the discourse allowing identification of relationships and linkages between the different themes to take place (Saunders, Lewis, and Thornhill 2009, 509).

For the current research, two initial interviews were transcribed and imported into NVivo®, these two interviews were individually studied and coded using the “in Vivo” coding feature of NVivo®. This allowed freeform nodes to be created thus reflecting the data of interest more clearly. Open coding of the remaining transcribed interviews was performed in NVivo® using the InVivo coding feature as shown in the example below. The quotes “anyone else can step in” and “started rotating them around” were both selected at random to illustrate the coding undertaken as these statements related in some way to knowledge sharing.

*// Yeah. We ... we have a good system in our team where everyone's multi-skilled, so every week a team member does something different. So if someone's away, whether it's on leave or they're sick or training, **anyone else can step in** and do another ... another role // No. I try and, with the girls, I try and empower them to take on more, but also I want more multitasks, I want them to be able to do a variety of roles, like with regards to, the girls used to be, we had the [xxx] team at one location and the [xxx] in one location, and they still are at separate locations, but we started, before we lost the last two, we **started rotating them around**, so that they could help out to cover leave and also have a better understand of how each department operates //*

4.4.1.1.2 Axial Coding

Axial coding is undertaken after completing the open coding exercise. In this approach, data are grouped into new categories by making connections between concepts, associating codes to contexts, consequences, patterns, and causes. Saunders, Lewis, and Thornhill (2009, 511) discuss that categorising involves developing categories and then attaching these to meaningful chunks of data that enables a researcher to recognise relationships thereby further developing categories. They also state that categories need to have an internal attribute, which is significant in connection to the data and an external attribute, which is significant in connection to the other categories in the study.

For the current research, after the open coding processes, the data were reviewed in light of the coding to identify relationships and redefine the categories further. These

were then grouped into a hierarchical structure using the tree node functionality of NVivo®. As part of axial coding, the free nodes “anyone else can step in” and “started rotating them around” were further coded to a higher-level node “Sharing” and then further into the node “Explicit” as both these quotes relate to making tacit knowledge explicit.

4.4.1.1.3 Selective Coding

Selective coding is the process of choosing core concepts and methodically linking them to the other concepts, thereby validating relationships and identifying concepts that need further refinement and development. This stage is used to identify one of the categories as a core category, with an emphasis to recognising and developing relationships between the principal categories that have emerged from this grounded approach (Saunders, Lewis, and Thornhill 2009, 511).

For the current research, the central or core categories identified through the analysis of data were Hinder, Foster, Internal and External Environments. Figures 5.2 to 5.5 show these categories with their identified sub-categories. These are discussed in their respective sections of Chapter 5.

4.4.1.1.4 Reflexivity

Impartiality within the data collection process was maintained by actively applying reflexivity during the interviewing process as well as post interviews. Reflexivity has been applied throughout this research and post interviews to identify areas of strengths, weakness, and opportunities for improvement in order to better prepare for future interviews as well as initially to assist in refining and moulding the interview questionnaire.

Reflexivity is a process that challenges the researcher to examine explicitly how their research agenda, assumptions, subject locations, personal beliefs, and emotions affect their approach to research (Hsiung 2008, 212).

The main objective of reflexivity within qualitative research is to “acknowledge and interrogate the constitutive role of the researcher in research design, data collection, analysis, and knowledge production” (Hsiung 2008, 212). Citing Kirby and

McKenna (1987), Hsiung (2008, 212) introduces the concept of “conceptual baggage,” which emphasises the interdependency between a researcher’s assumptions as well as the subject location in relation to class, race, sexuality, and gender.

Reflexivity involves arriving at a decisive point where the researcher turns the exploratory lens away from others and towards themselves by becoming more aware of their own assumptions, locations, and emotional responses and by doing so researchers can examine any preconceived notions that may hold. Adams (2010) discusses that listening carefully during the interview is crucial. This includes holding back as required as, the interview intent is to explore the experience of the interviewee and jumping in, or interrupting prematurely may distract and make the interviewee lose focus preventing the researcher from identifying threads to explore further. Adams (2010) further states that listening takes place at many levels including active listening to the content of the interview thereby picking up cues for further exploration, being aware that the interview doesn’t run over time as well as making sure that the interviewee is still comfortable to carry on with the interview.

This is crucial in interviews where sensitive topics are being explored and discussed. It is also crucial to remain focused, professional and emotionally in control verbally as well as via facial cues as some of the responses depending on the content of the interview may be upsetting to the interviewee as well as the researcher. Silence during the interview is another aspect to manage carefully. Adams (2010) comments that allowing a silence to expand, creates a space for the interviewee to fill with their experience in order to further explore or explain a response that they had just provided.

This means a researcher should be non-judgemental and remain professional by managing their emotional responses to the responses of the interviewee for instance if the interviewee makes an inappropriate comment, the researcher should not show offence or allow their personal prejudices to influence the outcome. This helps ensure that the interviewee does not shut down emotionally, stop responding, and end the interview prematurely (Adams 2010). As was noted earlier, this was particularly relevant with one interviewee where the whole interview felt strained with the interviewee appearing argumentative and almost bitter about his experience

within the organisation as well as career to-date with comments like “what’s the relevance” of this question and “don’t know what the relevance is to innovation?” Adams (2010) also recommends keeping verbal, facial, or physical affirmative responses to a minimum so as not to influence the interviewee and their response.

Oakley (1981) identifies the role of the interviewee as a passive responder and that of the researcher as questioner and rapport promoter, whereby the primary purpose of promoting rapport is to collect data. This research was a practitioner-research project, in which rapport with interviewees’ already existed, which made it somewhat easier to collect the required data as well as broach areas of interest which otherwise may not have been possible. Oakley (1981, 33) cautions that successful interviewing requires the interviewer to be “friendly but not too friendly,” balancing the warmth required to generate rapport with the detachment required to maintain distance and objectivity. It is therefore important not to remain too distant, as that would affect rapport and consequently the interviewer and interviewee relationship within the data collection process.

Upon reflection in the interviews conducted for this research, this was achieved. The focus was on the responses being provided by the interviewee so this researcher generally refrained from providing any affirmative responses that may have been interpreted that the “right” answers were being given. In a few areas an automatic response of ‘cool’ or ‘yup’ was given, which again upon reflection, is a very casual and not a very professional response. These responses may have resulted from having worked with the interviewees closely for lengthy periods so subconsciously some casualness may have crept into the process.

This research was conducted as a practitioner research study with such study seen as having a dynamic reflexive conversation between what the researcher is informed and what the researcher observes (Hamilton and Corbett-Whittier 2014). Some negatives highlighted for such research are; being too close to the activity, unintentionally using disclosed sensitive information, maintaining integrity, sensitivity, and discretion when reporting (Hamilton and Corbett-Whittier 2014), engaging ethically and thoroughly (Walker and Solvason 2014), problematic access

to subjects or subjects not valuing the study thus providing questionable responses (McLaughlin 2014).

Practitioner research has the potential for the researcher to engage in, question the informed and observed thus improving practice with immediate value to the organisation (Walker and Solvason 2014). Such research is also likely to focus on issues that the organisation sector or the organisation itself is facing thereby having an immediate positive productive impact (McLaughlin 2014).

4.4.2 Summary

The purpose of this chapter was to present and discuss the research methodology and context applied for this research, which assists in addressing a key issue identified that potentially affects organisational sustainability.

The philosophy applied for this research was that of becoming using constructivist ontology and an interpretive epistemology. Using an inductive approach data were collected and analysed using aspects of grounded theory. After approaching and being declined by other resource organisations within the sector, the researcher then undertook this research project as a practitioner researcher project.

This chapter also describes in detail the research method: from selecting a case study organisation; the process of gaining access; development of data collection strategy; the actual data collection and management process and then the analytical process.

The manner in which research rigour was achieved in the context of this study was discussed within this chapter Figure 4.3 summarises approaches applied to determine rigour. Finally, the chapter concluded with a discussion on techniques adopted through a reflexive process to assure the researcher that they were impartial during the research process.

Elements	Condition	Action Taken in Research
Philosophical stance	Becoming	Bracketing
Data gathering	Semi-structured interviews	Questions were designed to encourage participants to engage and discuss their experience.
Giving voice	Recording and transcription	Verbatim transcriptions undertaken with respondents' words used to represent their experience and data code.
Constant comparison	Ongoing review of data	Theoretical sampling and constant comparison used to further probe areas of interest and refine interview process.
Expert checking	Critical readers and discussants	Research process and resultant findings discussed with peers and mentors on an ongoing basis.
Triangulation	Secondary data sources	Industry and sector data, embedded case study approach
Replicability	Transparency	Audit trail detailing research decisions

Figure 4.3: Elements of Rigour

Chapter 5 discusses the research findings.

5 Chapter Five: Findings

5.1 Introduction

The purpose of this chapter is to detail findings arising from the analysis of the data collected and discussed in Chapter 4. The participant views have informed the development of the theoretical framework discussed in Chapter 6.

The key question to answer in this study was

How can Adaptive Leadership leverage on intellectual capital management to positively impact on social capital, creativity, and innovation?

The emergent model described in this chapter arises from the analysis of the data. It shows the features and elements that enable or hinder adaptive leadership to leverage on intellectual capital management thereby encouraging, facilitating, and positively influencing social capital, creativity, and innovation. Answering the research question potentially assists in developing a sustainable competitive and comparative advantage for organisations.

To enable data to be analysed, it was important to bring the research together into a manageable framework. The first step of the analysis was to read transcripts and produce a summary of the emerging themes. Thirty-seven themes emerged from this analysis. These were then further analysed and grouped together. Four focal issues or elements that are directly relevant to the central research question emerged, as described below. These were reviewed further for emergent insights and theoretical possibilities. Findings were analysed for emergent themes as described in Chapter 4 using a process of open, axial, and selective coding with the analysis logic presented in Appendix 1.

The emergent framework captures the four key core dimensions of the data, which influence creativity and innovation. These are; elements that hinder; elements that foster; internal and external environmental elements with the interrelationships proposed in Figure 5.1. Each of these dimensions reflects an important part of the insights that emerged from the participant's stories and views.

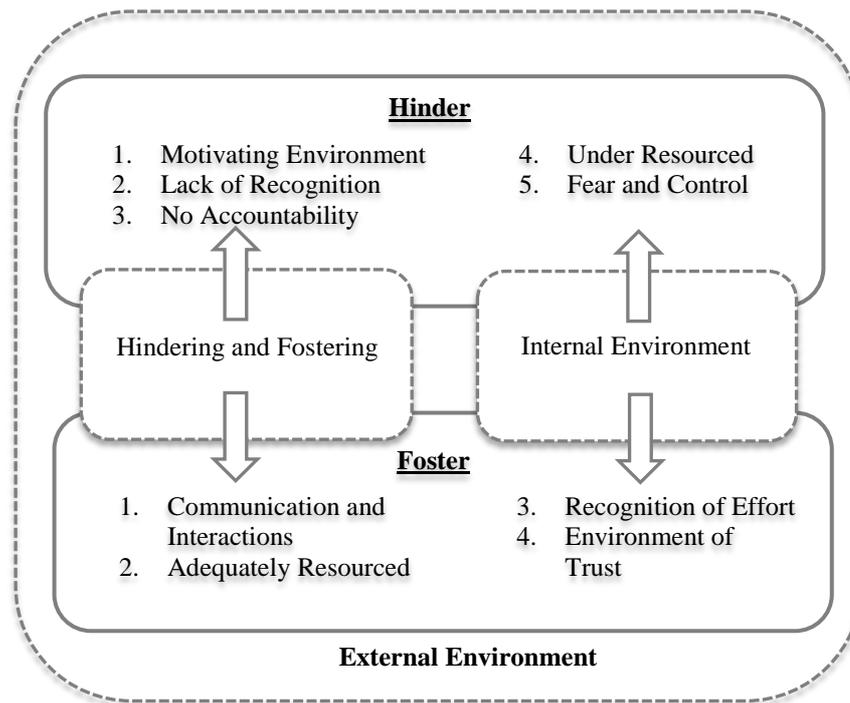


Figure 5.1: Creativity and Innovation: Relationships between key areas of data

As shown in Figure 5.1, nine sub-dimensions are contained within the two core dimensions. Hinder, has five sub-dimensions and Foster has four sub-dimensions.

Participant comments have been organised, presented and summarised to reflect perceptions and insights into the conditions that

1. Hinder creativity and innovation.
2. Foster creativity and innovation.
3. Create an environment required for creativity and innovation to foster and flourish. Environmental conditions are discussed in terms of the internal and external organisational environment as both have the potential to hinder or foster creativity and innovation as shown in Figure 5.1.

Elements that hinder or foster innovation and creativity result from and relate to actions that are undertaken by organisational management. In addition, there are factors within the internal and external environmental that influence the broader environment within which the organisation operates.

Conditions that are seen to alternate between hindering and fostering are discussed under the most influential heading with alternative views noted under their respective headings. For instance, providing a platform for social interaction such as team building is discussed under the heading of ‘foster’. Such platforms were perceived to assist in generating creativity and innovation. However, it was also noted that limited team building was being conducted by the organisation, and individuals described some reluctance to take part in such activities, thereby hindering creativity and innovation.

In this chapter, responses from participants are cited verbatim to demonstrate the detailed data relevant to each section under discussion. Such quotes are presented in italicised font and indented, however, for clarity and ease of reading, padding words such as “*Um,*” “*Ah,*” “*You know*” and “*I think,*” are replaced with three dots “...”. Repeated words such as “*there ... there ... there*” have been replaced with a single “*there*”. In some places, words have been altered to preserve anonymity or to clarify a participant’s comments. When this has been done, the revised words are contained in square brackets “[]”. Quotes from participants are separated by using two forward slashes followed by one space e.g. “// ”. Some participant quotes may also be repeated in more than one area, as they are relevant to more than one category or theme.

Confidentiality of data characteristically refers to ensuring that only the researcher is aware of participants taking part in the study as the research details lived experiences that could potentially result in harm to the participant (Kaiser 2014). For this research, there is a high possibility that identifying participants individually or in groups could result in deductive disclosure (Kaiser 2014) thus identifying participants from their comments. This would not honour assurances of confidentiality provided to participants during the interview as well as the conditions of project approval provided by Curtin University’s Human Research Ethics Committee. Thus, to mitigate the risk of identification, this researcher with support from mentors took the decision to quote interview statements without any reference to individual participant or group characteristics.

5.2 Hindering Creativity and Innovation

Participants spoke about how creativity and innovation is being hindered within the organisation. The five themes covered in this section discuss ways in which hindrance within the organisation is taking place. Participants identified areas shown in Figure 5.2. These related to how management set the tone, the lack of recognition or reward for staff who offered suggestions for improvement or change and the impact of staff turnover and shortages. The identified themes are summarised in Figure 5.2 and discussed in more detail below.

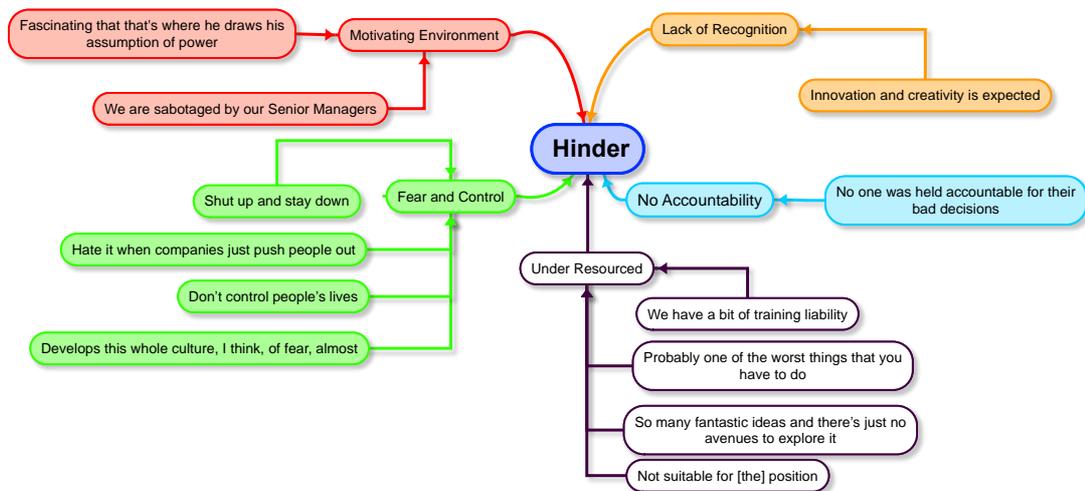


Figure 5.2: Elements Hindering Creativity and Innovation

5.2.1 Motivating Environment

This sub dimension relates to internal cultural aspects of the organisation that serve to affect individuals' intrinsic motivations to engage in creative and innovative behaviour.

We are sabotaged by our Senior Managers

Data in this category reflect participants' descriptions of perceived lack of support from management, with participants' linking issues such as a lack of emotional awareness or even bullying on the part of some senior managers. This was concerning as it had a demotivating effect on some individuals resulting in them needing to act in a reactive rather than proactive way.

*// ... sometimes we are sabotaged or being snipered by our [senior manager] who has a good heart [but] he offends people... very condescending ... doesn't understand that he has just insulted me [laughs]
 // ... always putting out fires // ... he had poor communication and he was a bully...//.*

Fascinating that that's where he draws his assumption of power

Data in this category reflect participants' description of perceived assumptions of power. Examples such as withholding knowledge caused demotivation, as data was not freely available. A participant provided an example of a colleague who withheld codified tacit knowledge by storing it locally on their computer rather than making it public on the network. This was a way of exercising power over others, as others needed to approach him for the information. Individuals may not even be aware of the existence of such information thus causing rework and wasted effort and resources.

// ... [you] have to go back to him for the information as opposed to ... wherever the information is stored ... I find that fascinating that that's where he draws his assumption of power //.

5.2.2 Lack of recognition

This sub dimension relates to internal cultural aspects of the organisation that serve to affect individuals' extrinsic motivations to engage in creative and innovative behaviour.

Innovation and creativity is expected

Participants discussed recognition and reward from the point of view of encouraging creativity and innovation with their absence noted as a hindrance. Various views were expressed around creativity and innovation being an expected part of the job rather than relating to a particular skill or effort. Participants recognised that they were generally well paid and that as skilled workers they should contribute innovative solutions to their work environment. However, participants also expressed some resentment when this was taken for granted with no guidance or encouragement provided.

// it'd be nice to get a pat on the back every now and then but you don't come to work expecting a pat on the back all the time. You know, to some extent innovation and creativity is expected of [us]; that's part of your job description, isn't it? //

Another participant supported this view and stated that at responsibility and pay levels such as theirs, agents should not expect rewards.

// At a certain level ... it's up to me to be able to recognise where things aren't working and ... I don't necessarily expect to be rewarded for it ... because I feel like I'm actually [laughs] paid very well and rewarded within what I do already //

Alternatively, participants commented that being creative and innovative was not rewarded with participants frequently wondering why they continued to be creative. Senior managers were also seen to receive all the recognition rather than recognition filtering down to innovative individuals. Creativity and innovation was not encouraged either through the organisational structures nor were individuals recognised for their contributions.

// There's no reward, is there [?] ... to be innovative and provide great solutions ...the organisation doesn't have a good structure ... [creativity and innovation is] not encouraged // Try to find new ideas but I think we are reaching the point now where it is a kind of. Why? // someone wants to take their idea // senior people in there have got all the accolades //

This was further elaborated by stating that motivated individuals tend to be innovative regardless of external encouragement as their motivation is to perform at a higher level. Within the organisational structure, however there was no evidence of creativity and innovation being encouraged with some participants commenting on limited encouragement.

// Some people are just motivated and they'll do that whether they are encouraged or not ... because they're performers and they always want to

perform well ... // encouragement of innovation ... it's limited // I wouldn't say discouraged but it's not encouraged //.

Other participants discussed the absence of recognition or encouragement through formalised reward structures or the provision of visible incentives or bonuses to be creative and innovative. The bonus structure at the time was also not seen to reward and reflect performance of individuals.

// bonus structure [here] is not really about performance // no incentives apart from ... completing your objective // I don't think it is really recognised ... there's certain expectations ... you achieve those expectations and you get on with it // [performance review] won't be as good as the ones that do achieve [objectives] // [no] ability to have a spot bonus system ... would be a good way to motivate // Yeah, especially if a few people start getting it, then everyone's like, well, what can I do? [Laughs] //.

Participants also wryly commented that innovation was recognised by the mere fact that the organisation still employed them with the job being reward enough. Some participants were also not interested in formal recognition, as being able to improve people's lives was a reward in itself.

// I think it's recognised because you're still here ... get on with it // you're helping your stakeholders in other areas ... make their life a little bit easier. So for me personally that's a reward // it's rewarded in ... you can actually just do your job easily [laughs] ... if something's working properly, I can get so much more done in a day, so that feels rewarding //.

The business improvement department more fondly known as the *BI* department was highly symbolic within the organisation due to its visibility across all departments and hierarchy levels of the organisation potentially dismantling the existing silo culture. The *BI* department was seen to foster relationships as well as encourage and reward creativity and innovation within the organisation. A participant stated that creativity was not being recognised and that the business had lost a source for ideas after the disbanding of the business improvement department.

// [BI] were across all departments, you could have the same issues ... and you would be able to share that idea // we have lost something there with [BI]... being disbanded ... I don't see a lot of creativity being recognized // recognition and rewards were given out [by BI], they were spoken about in meetings, it was handed out and it was included in publications //.

Even in the absence of the *BI* department and lack of acknowledgment from the organisation, some individuals were seen to have found ways to support each other. This was stated with a participant commenting that individuals tend to support and acknowledge a colleagues contribution even though there was no formal organisational acknowledgement.

// [no] acknowledgement through the business or anything like that... when we see good things happen... we tend to say ... that's really good and congratulations, ... all about camaraderie between individuals //.

A participant commented that the organisation had not been innovative during the feasibility and implementation stage and is therefore in the short term committed to an inflexible mode of operating.

// We missed the innovation at the ... design or the feasibility stage ... effectively stuck 'til you ... commission the whole project, ... you've already ... set in stone your design, your equipment ... and the operating philosophy, and there's nothing you can do about it //.

A lack of organisational structure and communication was also discussed which was resulting in uncertainty in roles and responsibilities as well as a silo culture.

// little bit more structure ... of roles and responsibilities ... and probably a little bit more in the communication // too many cells, too many people doing their own thing and not ... working with others //.

By providing an example of a well-known consulting firm, a participant discussed that in their view diverse groups encourage and foster innovation. This participant

further explained that organisations within the resources industry do not make use of diversity within groups thus reducing scope for out of box innovation.

// best ideas come from inter-disciplinary or multi-disciplinary groups ... case studies that involve [consulting firm] ... they understand that different people bring different perspectives, and that's why they're innovative. ... mining companies [and] traditional companies don't do that ... by definition mining is not very innovative to begin with, it's ... incremental in its innovation ... but not ... out-of-the-... box innovation //

Participants described situations where someone pretends they own someone's idea, creating distrust and reluctance amongst individuals to share ideas. Participants further stated that trust is a core condition for knowledge sharing.

// if someone ... wants to take their idea and pretend it is their own ... no trust between players ... people won't bring their ideas to the table ... so there has to be a trust as well //

A participant stated that due to the tenure of most employees, the likelihood of recognition and reward through promotion was limited thus making it important for some sort of recognition and reward for a job well done.

// people forget but recognition's important... when people have got a job and they've been in there five, six years and ... they [are] ... not likely to get promoted ... get recognition for doing a good job //

5.2.3 No Accountability

This sub dimension relates to aspects of the organisation that fail to recognise poor decisions made by individuals or the organisation. This is also the converse of not recognising or rewarding good ideas, as there are no real consequences for bad ideas and decisions.

No one was held accountable for their bad decisions

One of the main issues mentioned by some participants is the amount of rework and reconstruction done to comply with local regulations. This resulted from the lack of a proper feasibility study and starting a Greenfield operation. Management thus did not understand the local environment with adverse consequences of others exploiting the organisation. Individuals were also not held accountable for repeated errors resulting in more corrective work. Respondents commented:

// There is so much rework // same mistakes being made over and over again and it's disheartening // no one was held accountable for their bad decisions //.

5.2.4 Under Resourced

This sub dimension deals with the practicalities of requiring resources for creativity and innovation. The existence of intrinsic motivation, good recognition and accountability and supportive leaders still necessitates the need for some organisational resources to support creativity and innovation.

So many fantastic ideas and there's just no avenues to explore it

A participant described how individuals were advised of the lack of resources for innovative ideas within the organisation with no real process available to follow ideas through. Departments within the organisation were seen to be operating separately thereby hindering the sharing of ideas with innovation lacking importance and not being encouraged.

// [no] opportunity for innovation or creativity, it's due to financial constraints, ... so many fantastic ideas and there's just no avenues to explore it...there's no money to invest, you need to wait until operational // still operating very separately in each department // innovation is not something that is really talked about ... not really promoted it doesn't have a high profile //.

Participants further discussed that individuals need to ensure that organisational scarce resources were utilised responsibly and adequately. Scarce resources within departments were also causing issues with managing and sharing skills within teams.

// we've always got to look at the dollar ... as if it belongs to somebody else ... and not just let's ... spend it // we're not a big team... we have limited resources // only got one license so no one else can use it ... there's a few barriers to a more even spread of skills //.

Lack of financial as well as human resources were reasons for the absence of formal team building interactions. Team building interactions are difficult to justify whilst the organisation was not fully in the operational phase.

// Lacking the person there to coordinate ... the team together ... budget constraints ...has put the kibosh on that it's hard to justify spending money... until we get [operational] //.

Budget constraint was discussed with an example of when a cost was to be incurred. The individual was however unclear as to which department would incur the cost thereby causing uncertainty. Another participant commented that having worked within the public sector they were more aware of financial constraints than other people working in the organisation who were more eager to spend money that was not their own.

// cost as to which department pays ... getting the approval for the funds ... don't know who approves it // working for the public purse has made me a lot more fiscally aware ... a lot of people ... in this [research] organisation ... are quite keen to spend money when it's not theirs ... //.

Participants also discussed the lack of teamwork and the project budget overrun stating everyone was seen to be working individually and within silos rather than pulling together as a team to resolve issues.

// not working as a team... it's so desperately over budget, desperately over time and everybody's just squirreling away trying to solve problems without ... basically going through ... the proper consulting [process] //.

Not suitable for [the] position

Hiring the wrong people who do not meet the role requirements or generally those who struggle with the demands of the role requires an investment in time, as individuals need to be performance managed. This puts a lot of pressure on managers as well as the team in the process damaging the morale of the team. Some individuals were also seen to have interviewed well however their on the job performance was lacking.

// manage her out ... she was not suitable for her position... it was difficult for us all // didn't meet the role requirements and after the probation period had to be terminated ... at times quite a struggle ... it's been quite a load on me personally // Saw the damage it was doing // sold their self at the interview and...skillsets are very limited // as clever and ... as sharp as they think ...and you've seen that round here, you look at people and you think, how did you get to that position you're in now? //.

In the context of ensuring that the wrong people were not engaged, participants discussed recruitment stating that the organisation had a good Human Resources department who recruited good candidates. Having previously worked with someone and understanding his or her skills also ensures that the wrong person is not recruited. One participant however commented that interviewing required the skill and ability to recognise the extra drive or aptitude to innovate within a person that would be valuable to the organisation.

// that's the skilly bit, of identifying that person at interview // was working here previously ... had worked together ... I knew her capabilities and stuff // I always look for ... that extra push ... to innovate //.

We have a bit of training liability

High staff turnover was cited as an issue for retaining knowledge within the department with retraining seen to constrain the level of service provided.

// a lot of turnover on some of the lower level jobs ... we got to monitor it ... make sure that we get a consistent level of service ... so we have a bit of training liability where we got to pick up, and then we have a bit of a liability to make sure that we don't [drop service] //.

Probably one of the worst things that you have to do

The quality and type of knowledge to retain within the organisation is critical. Therefore, selecting people to performance manage or make redundant in times of crisis, was seen as one of the more difficult responsibilities of being a manager.

// probably one of the worst things that you have to do in a ... supervisor or managerial role // I had to lose two positions ... had to make her redundant // if there's any discipline [issues] can be a bit awkward // really hard though to have to do that //.

5.2.5 Fear and Control

This sub dimension has links with motivation but also relates specifically to accepted leadership styles within the organisation. It affects intrinsic motivation but also appears to relate to a type of leadership that wants to control activities and to have predictable/certain outcomes.

Shut up and stay down

A participant cautioned about pushing too hard and becoming too creative and innovative, as there is a risk of losing credibility through a lack of understanding of the intent of the innovation by others.

// We haven't had too many examples of people sort of saying just shut up ... and stay down ... depends on how far you push things ... you can go so far out that you leave people behind you ... [and then] you've lost your credibility //.

However, a number of participant responses highlighted that managers may be suppressing innovative ideas within the organisation. With the flow of knowledge restricted and hindered because management behaviour and complacency or reluctance of individuals to get involved, with comments such as

// Don't know if their managers are actually squashing the ideas // Managers just protect data, information // disappears into who knows where // everyone should have an awareness of what's going on ... sometimes ... you try and include people into information and they don't want to know //.

Hate it when companies just push people out

This was a rich area of data with restructuring and redundancies frequently brought up as these create an environment of organisational knowledge leakage. Knowledge leakage can be involuntary that is, a result of restructuring and redundancies, or voluntary with individuals leaving for personal reasons. Such leakage can result in demotivating staff and potentially resulting in learned helplessness. Some of the comments received were:

// It's awful when you see the knowledge go // Feeling a little bit flat // we were all made redundant suddenly //.

There was significant loss of tacit knowledge due to high staff turnover. Thus retaining personnel and consequently knowledge within the organisation is important. With not enough thought given to which individual and thus what knowledge is retained. Individuals commented on the lack of loyalty within the resources sector with rash redundancies in economic downturns as well as individuals voluntarily moving between organisations within the sector. A participant also stated that it was important for knowledge retention to ensure that the individuals remaining after redundancies understood organisational systems and processes. A participant also stated that it was important to ensure continuity within their team in the event of redundancy.

// Hate it when companies just push people out // movement...always ... in the mining sector... with [no] loyalties ... [after] 17 years ... I was retrenched // lot of [tacit] knowledge has disappeared // the main thing is that the people I leave here are fully into the system and they know how it works and everything is good // high churn rate [not] enough attention to keeping people who have ... got that knowledge together // retain ...the right people //.

The morale within the organisation was discussed specifically relating to the impact of redundancies with comments that indicate redundancies were having a demotivating effect on performance.

// We've just been through, you know, a couple of rounds of redundancy so I would say it's not great // feeling a little bit flat because people they know have lost their jobs... everyone's a little bit maybe quieter or a little bit reserved //.

Probed further with the question:

Researcher: so in terms of the redundancies, that kind of has a dampening effect ... and would you think that actually impacts... performance

Participant: Oh yeah, yeah, it did for quite a while. Because everyone's kind of going, oooh, what?? Yeah, yeah, definitely.... very discouraging

The impact of redundancies was further discussed with a participant stating that although redundancies affect team dynamics and interactions, the organisation has to be realistic and reduce labour expenditure in downturns. However, the welfare of people remaining within the organisation as well as those who have left was seen as the manager's responsibility.

// business restructure and redundancies... impacted on the [team] morale ... much harder to bring the team together ... need to look after and make

sure ... we're doing ... right thing for the business" ... we all care about the people we work with and we want to make sure that they're okay //.

Individuals' leaving the organisation by their own accord was brought up as an issue that causes knowledge leakage from within the organisation. A participant stated that new opportunities sought by leavers are sometimes not, what they initially seem to be causing the leaver to regret their decision to leave. However, this still creates leakage of tacit knowledge although the participant noted that this could sometimes result in rebuilding a much stronger team.

// Manager and things like that move on – that's the issue, because they go with all the corporate knowledge // Grass isn't always greener // then the people [who] were maybe making things [un]pleasant left ... we grew a really strong team again //.

Maternity leave was highlighted as another cause of knowledge leakage with a number of staff taking leave and with some consequently not returning from leave. A participant also commented on the prevalence of pregnancies within the organisation with some specific tacit knowledge that has been lost as a result. This has resulted in pressure and disruption, as short-term contract staff needs to be brought quickly in order to provide continuity of service sometimes resulting in unsuitable candidates being employed.

// everyone seems to be getting pregnant [laughs] it's part of life, so I'm not angry, but I've lost a lot of really good girls to motherhood // fixed-term contract covering maternity leave // at times quite a struggle... I was going to lose my other person to maternity leave and I had to get someone in place pretty quickly // she went on maternity leave we employed... another person who didn't meet the role requirements //.

Other participant comments relating to covering for maternity leave that support the prevalence of knowledge leakage within this research organisation were:

// She went on maternity leave... came back for a little while ... went back on maternity leave [again] // job sharing ... one's on maternity leave // stable...only reason that we have lost girls recently is maternity leave //.

A participant stated that organisations sometimes do not think through their staffing levels properly by making positions redundant. This influences knowledge retention resulting in the lack of key resources to complete tasks.

// during the GFC [Global Financial Crisis] three of those were retrenched, ... three months later I came along because there was not enough resources to do the work, which is typical of ... this industry //.

Conversely, a participant discussed being recognised by their manager for the value they brought to the team thus being retained within the organisation.

// selling points of [us] staying, or being kept on, is we do have that knowledge and [manager is] aware of that ... that's some of our value to him, as well as what we can produce //.

Don't control people's lives

Facilitating interactions amongst organisational agents was discussed. This is important as it assists the organisation in building rapport, trust, and cooperation amongst individuals and across departments potentially helping break down a silo mentality and silo culture.

One participant however commented that the organisations needed to be careful with agents on FIFO (Fly-in, Fly-out) rosters as after hour facilitation could be seen as interference. This is because the organisation already manages and tells people what they should do for 12 hours a day for 14 days straight. This particular participant felt very passionate about the organisation not facilitating any interactions as they felt it was unreasonable to do so.

// as an organisation we've got to be careful that we don't control people's lives, you know, a 12-hour day ... for 14 days ... is probably control enough

... bar shuts at a certain time, they've got to be in bed [at a certain time and] we now control who you sit with ... who you're friends with ... it's probably a bit tough //.

A participant commented on a specific department where people had to be aware of everything they did or said stating that they felt the department was highly regimented and controlled. This participant commented that individuals in this area were being micro managed.

// Very structured ... have to watch what you say ... cannot step out of line and ... you just feel for the people [in the department] //

Develops this whole culture, I think, of fear, almost.

Senior managers frequently used fear as a means to support their decisions or create unease or tension within their areas of responsibility thus instilling a culture where information was being withheld resulting in daily unforeseen issues. Participants stated:

// Develops this whole culture, I think, of fear... // Whole culture of not telling him, and hiding stuff // surprises every day // we have done the redundancies, everyone in this room... are all safe, you can rest easy and then he went no, you can't rest up //.

Senior management behaviour was discussed with a participant describing how a senior manager was reprimanded in a managers meeting. This has resulted in managers concealing errors thus not taking responsibility for actions of their teams.

// you really can't tear strips off your Managers at a Managers' meeting // got people hiding foul-ups and ... not fronting up //.

A participant laughed wryly and stated that being a permanent employee did not matter as the organisation could let a person go at any time making all employees within the organisation non-permanent or temporary. This comment was made after

providing an example of how a long serving director of the organisation was terminated at short notice.

// just have to look at what happened to [director]. [Laughs] there's no guarantees, mate, about permanent employees. [Laughs]... we're all transient by nature //

5.2.6 Summary of Elements that Hinder Creativity and Innovation

This section examined elements that are seen to hinder creativity and innovation within the organisation. The themes covered highlight ways in which hindrance within the organisation is taking place. Elements examined here can be further grouped into three main dimensions that is; elements that impede creativity, elements related to staffing and elements related to actions by leaders.

Elements that impede creativity include (a) perceptions that creativity is not aligned with credibility; (b) a lack of resources/avenues for exploring creativity; (c) a lack of rewards for creativity and (d) some employee's tendency to hide/protect creative ideas/solutions.

Elements that relate to staffing by the organisation include (a) uncertainty about future employment (b) turnover; (c) recruiting the wrong people/skill sets (d) lack of training. Participants highlighted retaining quality people or hiring people suitable for the position as areas that needed to be addressed.

Elements that relate to actions by organisational leaders include (a) demotivating actions/comments (b) poor accountability for bad decisions (c) controlling actions and (d) a culture of fear. Participants' highlighted managers using fear to control, being sabotaged by senior management and the impacts of restructuring and redundancies within the organisation. The management culture was also discussed in terms of not having a structured process to explore new ideas or strategies to address knowledge leakage. Also highlighted were management accountability for decision-making and the organisation not being seen as totally controlling people's lives.

These issues were seen to dampen creative and innovate initiatives within the organisation.

5.3 Fostering Creativity and Innovation

Participants spoke about how creativity and innovation is being fostered with the four themes covered in this section discussing ways in which fostering within the organisation is taking place. The areas participants identified relate to how management set the environment for trust, the provision of support, recognition, or reward for staff that offered suggestions for improvement or change, and the forms of communication and interactions taking place within the organisation. Figure 5.3 summarises the themes identified below.

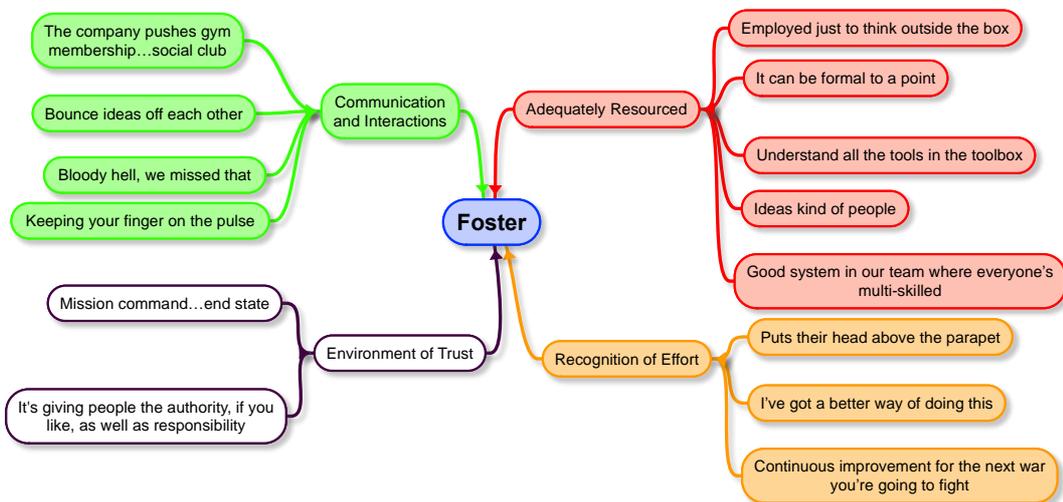


Figure 5.3: Elements Fostering Creativity and Innovation

5.3.1 Communication and Interactions

This sub dimension relates to internal aspects of the organisation that serve to affect individuals' intrinsic motivations to engage in interactions that potentially result in creative and innovative behaviour.

The company pushes gym membership...social club

Although too much control was seen as hindering, participants acknowledged that interaction outside of normal work hours had a range of benefits. The organisation encourages after hour's interaction amongst staff by providing subsidised gym membership and part sponsoring a staff social club that holds regular social events such as evening sundowners and river cruises. In some ways these interactions have

allowed individuals to make others accountable for instance asking why someone missed their gym session. Participants also saw an integral part of the manager's role to ensure everyone participated and interacted especially during team building activities. Whilst not everyone wanted to participate in company events, the importance of these events in building understanding and trust was noted.

// the organisation actually ... encourages these interactions ...I suppose, by the social club and the gym memberships // Managers ... see that as their responsibility to make sure that people interact with the team // everyone has to present, everyone has to be involved and we expect everyone to come along to the social function afterwards //

Participants stated that interacting with colleagues outside work hours through the social club and the gym encouraged people to get to know others on a personal level. This has allowed individuals to understand the likes, dislikes, and interests of others in a more comfortable manner building trusting bonds and allowing these friendships to be transferred into daily work conversations. Another participant stated that socialising depended on whether individuals liked each other as well as other responsibilities that they may have that hamper taking part in after hour activities.

// you actually transfer that into ... your work interactions // I've gone to a couple of things ... I think it does encourage ... good working relationships as well when you can get to know people ... on a personal basis ... it just builds a different kind of trust //

Some individuals appreciated spending time together therefore liked socialising after hours and attending personal functions or just catching up for a chat or a meal.

// more about like-minded people working together, enjoying each other's company and taking it sort of outside of the workplace //

Participants however also identified a number of constraints in relation to team building and other company-sponsored events. A participant commented that providing a platform for social interaction does assist but they had not seen anything

formal arranged by the organisation. Regardless, this particular participant was reluctant to take part in such activities anyway. Having casual catch ups organised by individuals was also regarded as bringing individuals closer to bond.

// a platform of encouraging social interaction ... assists // we don't really have team events // just to have a catch-up ... it's also like a team-building thing //.

Others commented that it would be good to have team building, as leadership generally emerges from lower levels during such activity thereby identifying leadership potential. However, it was noted that there is never enough time to hold any team building.

// it's not always the leaders that are the leaders in the team building // half a day for team building is near to impossible //.

Onsite facilitated interactions were discussed with a participant cautioning that being together on site for two weeks at a stretch and not getting along with somebody can be very difficult. Having team functions on site was also stated to be hard as it affects production and potentially safety with the risk of individuals being drunk on the job from alcohol provided by the organisation.

// if you don't get on with somebody... two weeks on site can really wind them ... up // it's going to affect production // if you provide drinks for the night you have got to be careful because you don't want people blowing numbers the next day //.

Participants stated that individuals were busy afterhours onsite with their own activities so getting involved in socialising was seen as optional however, a number of individuals interacted by exercising together or having a chat and a meal.

// go for a walk ... have a chat // dinner or for a drink //.

Conversely, a participant discussed the lack of promoting social networking stating that being a different ideology, management probably did not see it as value adding to the organisation.

// it's a Western philosophy ... that's why it doesn't happen ... it's not something management sees as a good tool //

Bounce ideas off each other

Interacting with colleagues and having an open discussion was highlighted as an important source of sharing information and discussing ideas or issues in order to come up with solutions.

// we bounce ideas off each other // discuss issues // talk about it as a team //

Participants stated that individuals should not become complacent, as thinking creatively and continuously improving is part of each individual's role.

// there is no point in just kind of sitting back and going "Okay, it's all being done." Because quite obviously there is no end to innovation, being creative ... we understand that we don't know all the answers so our job is to continuously try and find what the answer to the problem is...which requires creative thinking //

Participants stated that individuals had the required knowledge and experience to perform, improve, and make their own roles more efficient. Participants have also learned lessons through performing their roles regarding what improvements can be made. By discussing and exploring issues and solutions together, identified solutions can be further refined. In addition, regular meetings were seen as a good communication medium to inform and bring the team together.

// if there are better [solutions] we talk about it and then we can implement it // what we could do to potentially improve it // we've found as we've

learnt more in the role that there's actually improvements ... that could be done // it will just make life easier ... and more efficient //.

A senior manager commented that it was important to recognise the concerns and objectives of the team as well as the overall organisational objectives. They further discussed that by encouraging everyone within the team to get involved in team interactions, the team can function better and more productively with the organisation benefiting from such combined teamwork.

// Encourage everyone to be involved... being empathetic ... synergies make up for any shortfalls ... work on the team dynamics //.

Having an open discussion was highlighted where individuals discuss and encourage other individuals to give their thoughts on issues and ideas. This assists individuals in modifying and improving on the combined thoughts and ideas of the team thereby collectively becoming a team idea.

// open discussion... individuals refining the thoughts of other people // improved, by the group //.

Openness was discussed in different forms with participants stating that openness in task performance is required in order to allow diverse views to be brought in and risks to be taken. Openness also results in a more robust connection between individuals with a higher degree of honesty and trust.

// the stronger the bond ... stronger the trust ... openness to bring in different ideas and take risks //.

A participant expressed that there was openness at their level, as they were made aware of everything they needed to know to perform their role effectively.

// I don't feel like I'm ever in the dark ... I know what I'm supposed to know//

Openness also permits communication across levels where individuals are free to go higher up to discuss ideas with individuals not feeling like they are being ignored or their efforts being thwarted. This also allows good ideas to be incorporated within the organisation.

// Open forum, and open-door policy ... can go and talk to [higher manager] you're not constantly being shut down // open to both dismissing or embracing [ideas] //

A manager however commented that as they were ultimately responsible for the impact of any good or bad decisions, they made an informed decision based on all the information provided to them by their staff.

// if things go wrong then I'm the one that's in... explaining what had gone wrong. Therefore, if that's the case, I'm going to make the decision ... based on all the information that my guys give me //

Openness also allows individuals to understand their role clearly, providing them with the opportunity to get on and accomplish it.

// flexible mission command ... [not] get too involved ... [in] day-to-day operational decisions ... come to me [if needed] //

A manager stated that they shared non-sensitive information openly with their staff with individuals freely able to provide their views on issues thus identifying common views and agreement.

// open on everything ... protect[ing] data, information ...doesn't work [unless] it's confidential [or] irrelevant // gets discussed for a while before we sort of reach a consensus //

Participants discussed connecting with others and swapping roles as a means to cross skill and share knowledge providing a broader understanding of the departments' role as well as support to answer queries.

// lot of interaction ... and cross-pollination // rotating them around // we staggered it ... to answer any queries //

Daily conversations taking place within departments that facilitate rapport and interactions were discussed with participants commenting that conversations usually started with a morning greeting and asking about health and wellbeing with some gossip included. A participant also commented that it would be uncomfortable to work with people who did not talk to each other. Some participants also engaged constant communication as a source of teaching and learning. This was a particularly rich area of data, reflecting participants' large number of relevant comments with a selected few cited below.

// There's the usual greetings in the morning // I try to include a bit of personal // you've got constant communication ... learning something new, or teaching someone something new ... strange to sit somewhere where people aren't talking to each other// they talk all day ... loads of rubbish, but it keeps them occupied and happy //

Conversations and interactions were linked to helping to know people better and understanding how they approach their work. Thus, helping others understand how they can collaborate. Relationships were also seen to build more respect and allowed open conversations without upsetting others. A participant also noted that working with your partner on site helps, as the mutual support within the couple relationship adds stability to the work environment.

// get to understand people that you work with... for a better outcome // bit more respect [as] built those relationships // If there's a couple there tends to be stability //

Conversely, a participant stated that everyone was pleasant and interacted but they did not recognise this to have any connection on creativity and innovation.

// Relationships ... we're all cordial ... we communicate with each other, we exchange information ... but ... I don't see that has any bearing, or little bearing, if anything, on innovation //

Lines of communication were discussed with an individual stating that their responsibility was to communicate at their own level within the department and their manager's responsibility was to communicate at the more senior level. A lot of the communication responsibility lay with individuals performing the role.

// lot of that communication needs between the different stakeholder's falls on the responsibility of the person that is actually doing the work //

A participant commented on the impact of conversations stating that in their view they do not influence a person's innovative capability. Another participant stated that according to them an individual or the organisation could not actually force people to interact and thus cannot influence socialising within the organisation.

// as far as I'm concerned, whether a team plays together or not has little or no impact on how innovative they are // you can't force socialisation, can you? //

Retention of knowledge within the organisation was discussed in terms of ensuring that there was full handover of tasks between incoming and outgoing staff by documenting processes and procedures and maintaining this documentation in designated locations for all staff to access.

// comprehensive ... handover documents // ... extremely thorough in documenting //

A manager discussed being adaptable to change stating that as the environment was dynamic, this required their team to be flexible and share ideas.

// put their ideas forward ... open to change [as] things change rapidly ... being adaptable to it //

Participants discussed enhancing efficiency and looking for better ways to improve processes as this influences operations. A participant also commented that most solutions to current issues are a result of learning's from fixing previous similar issues further stating, that the aim is to apply this learning efficiently and effectively.

// we recognise this needs to be done // outcome will affect operations so ... our driver is to optimise operational efficiency // most reactive measures are scripted from [past] proactive measures //you always want to get to the end result and if you can do it in a more efficient, effective way then that's got to be the way to go //.

Bloody hell, we missed that

Getting everyone together was cited as important as it also allows ideas to be brought up and discussed by individuals from lower levels. Respondents commented that it surprised them how many times ideas that were brought up from lower levels highlighted issues that they had not previously thought of. Getting people together to step through procedures in a process allows the process to be refined if needed. Further, management need to provide a commitment to carefully consider and not just dismiss ideas put forward.

// I get them all together because you'd be surprised at some of the ideas they come up with at the lower levels... light bulb moment ... where they go, "Bloody hell, we missed that // it is about losing your ego ...creative idea[s] can come from anywhere in the hierarchy // it's more designed as a 360 view of what's going on // map every action you take and ... tell me how you can take some of that out and they do it // commitment from the group that all the ideas and concepts or, whatever people offer, should be viewed and not just tossed out [laughs] //.

A participant further stated that managers know the outcome that they are looking for so these together sessions are just designed to provide an overall perspective of issues, as managers need to be certain that all bases have been covered.

// Got to be careful you call it brainstorming because we actually drive the subject ... we ... know the path we want to go down, we just need to know that we've covered all the issues //

Managers already knowing the outcome they want may hinder innovation as they could become fixated on a predetermined outcome thus using a blinkered approach and effectively discounting other outcomes or disregarding divergent ideas that are presented.

Keeping your finger on the pulse

Going to industry user groups or conferences was described as very useful and a means to keep abreast of developments in the industry as there is a lot of innovation taking place in the public and private sector that can benefit the organisation.

// Just keeping your finger on the pulse ... there's a lot of innovation ... brilliant sources of information //

Networking was discussed as another means for sharing knowledge with the comment that within the organisation the resulting connections and relationships help in the process of knowledge sharing instead of knowledge hoarding by individuals wanting to work independently.

// Networking ... is important...you've each made your connections and relationships and then ... they cross-fertilise ... it works well, [instead of] ... an individual who gets on his high horse and says, "It's only me that can do this," it's going to be limiting //

Participants stated that they have secured and employed people with the right skills by keeping in touch with past peers and employees. A participant further stated that networking and interacting has allowed them to become more confident about their abilities and be more creative as they were not naturally inspired or innovative.

// Staff I have employed ... been through networking // Tend to target consultants because I've worked previously with a lot of them // I don't have

the creative side ... mixing with other people ... then I'll sort of come out of my shell //.

A participant gave an example of how they realised that a candidate did not have the right skills required for the position as the participant through their network could easily confirm whether the candidate had been truthful on their CV. In the process of interviewing a candidate, the participant further expressed the difficulties of dismissing initial favourable impressions created by a CV.

// I actually knew her boss ... she'd had her CV professionally written, and hadn't had the wherewithal to read it afterwards ... the trouble is ... if you think this is a fantastic candidate, the hard part then is ... getting that out of your mind when they walk through the door //.

Participants discussed that being professionals, individuals are aware of issues that need to be kept confidential in different departments across the organisation. However, with this awareness, a participant discussed that it is also difficult to make individuals see how their own personal issues affect others in the organisation and department.

// [need to] talk about ... innovation and tools // everyone should ... have an awareness of what's going on // hard to get [people] to be aware that their issues are affected by your issues or their issues affect your issues //.

5.3.2 Adequately Resourced

This sub dimension relates to how the availability of internal resources of the organisation affects individuals' intrinsic motivations to engage in creative and innovative behaviour.

Employed just to think outside the box

A participant's response on whether there was any acknowledgement from the organisation for being creative was that based on their profession, they were actually employed to be creative. This participant's role involved not following traditional solutions but to instead challenge and approach problems in a more creative and innovative manner.

// other people [may be] more applauded because they're expected to follow out the normal system and they've stood outside the box. In a way we're employed just to think outside the box //.

This view was further reflected in terms of whether acknowledgement and reward was offered with the individual stating that they felt that their creativity had been rewarded as long as the organisation accepted and proceeded with what they had put forward.

// You've got to say that our innovation and creativity has been rewarded because they've just done it ... nobody made a big song and dance about it, they just said, boom, [company], there it is, go and do it //.

It can be formal to a point

Fostering an environment for creativity can be formalised in some respects by setting challenges for individuals through their annual role objectives potentially resulting in functional participation, as individuals occasionally just need a little encouragement to get started. In addition, individuals can also foster such an environment through their own self-development initiatives.

// formal to a point because we have got to have objectives ... there's dual responsibility there for [us] ... to give them the opportunity, but also for [them] to drive their own goals // she does need a nudge, but when she goes she is brilliant //

Formal encouragement was discussed with a participant stating that they provided their staff with opportunities to put forward ways of improving processes.

// I'm a big encourager ... of innovation and change and trying to be a little bit creative, just to make things easier // as a team ... we sit back and say "is there a better way of doing this?" //

Understand all the tools in the toolbox

Employing people with the right skills and attitude was highlighted with individuals having the skills and capability to utilise all the resources provided to them. Being truthful and having the awareness to ask for help, as needed also helps people bond thus boosting general morale within the department and organisation.

// Understand all the tools in the toolboxes needed to do that job, and if ... you don't know how to use one of those tools, be honest and ... tell the right people // people within our department seem to get on pretty well so I think, yeah, that's why morale's good //.

A participant stated that by not having adequate resources, it was very easy to become negative and demotivated however, they have always looked for different ways to become innovative.

// not given all the tools we need...very easy to sit back and whinge about it ... be negative... extra push ... to innovate //.

A supervisor providing an example stated that by being aware of an individual's skills and ability, they were able to design a more challenging opportunity for their staff member.

// she was so capable she would get it done ... and then just sit around and that's why we have to keep on our toes with her. If this position comes through ... we know that [she] will knock that over //.

In the scope of getting the right people on board, consultants and contractors were highlighted, as the organisation did not have the required skills. With participants commenting, that engaging specialised contractors who provided an all-round service on a regular basis was more efficient. The use of consultants has also been highly prevalent with managers utilising previously engaged consultants allowing organisational knowledge to be efficiently retained.

// you're better off getting ... a specialist to do it ... so we engage ... consultants pretty regularly // target consultants ... I've worked previously with ...who can do the work most efficiently // they're a good...umbrella to do a ... large study ... we don't have ... those skills in-house //.

A participant however discussed the issue of who owns the *IP* for work done whilst engaging consultants as it was identified that the *IP* belonged to the consultants. This presents a knowledge retention risk for the organisation, as the knowledge is not internally stored. Thus, competitors can purchase the same knowledge making it widely available and non-exclusive to the organisation.

// there's a certain bit of IP that comes along with using consultants ... which is their property ... depends on the nature of the consultants... whether they give us ... virgin documents or whether they give us PDF'd documents //.

Participants stated that staff retention would be a more effective strategy as the increased use of consultants was seen as exorbitantly expensive to the organisation.

// getting contractors in ... just the costs are phenomenal // it is still valuable to us to be able to retain staff//.

Another participant stated that consultants were generally engaged due to lack of time resulting from core workload within the organisation.

// base load of work [and] we need extra information to enable us to plan ... that's why we engage consultants //.

Participants commented on some desirable qualities within people with the right skills and experience that could foster effective leadership, creativity, and innovation. These identified attributes are listed below.

// Highly intelligent...very analytical thinker // Approachable, ...knowledgeable // straight up...very friendly // Sit back and think about

things // be more parallel // just at a different level // listens // open and honest // communicative // organised // comfortable // confidence and strength // takes lead // brings team together // interacts really well // someone who knows a lot about what is going on // encourage relationships // friendly // bubbly...outgoing // letting people be individual // mutual respect // broad experience // Authoritative //.

A participant also discussed authenticity as a desired quality allowing people to communicate with ease, further elaborating that inauthentic people generally struggle to communicate with ease.

// people that are believable ... know what they are talking about, talk in a particular manner ... they can actually explain it in pretty simple terms ... whereas someone who is pretending often has to labour a point //.

A participant provided an example of how some managers were unreceptive to ideas, as this participant had to supply the same information multiple times. This participant found it unacceptable for someone in senior management not to recognise that something urgently needed to be done.

// Not a lot happened for a very long time ... three separate occasions we provided information ... then finally last month someone decided "Oh, we had better do something about this!" [Laughs] It just seems a little bit strange that it took that long //.

Ideas kind of people

Participants discussed desirable qualities within the right people that they thought assist in fostering an environment of creativity and innovation such as motivated and driven people with ideas to resolve problems by creating enhanced solutions.

// ideas kind of people // He is brilliant... turn so many things around ... right people in the right places // motivated staff ... whether they're driven towards just creating better solution // performers and they always want to perform well //.

A participant discussed the importance of recognising similar issues within other departments and sharing their ideas and innovations with these other departments.

// we're making changes and improvements ... I don't tend to put those forth to other areas. Unless ... something ... between us ... could ... actually work better [then] I'll put forth a suggestion //

Good system in our team where everyone's multi-skilled

Having individuals with a wide variety of skills is regarded as important as it allows for continuity within the department when someone is on leave or sick. Giving people variety in work also keeps it interesting for individuals as well as helping in retaining staff as individuals are given more responsibility. Participants also stated that this allows knowledge to be effectively distributed within the organisation.

// everyone's multi-skilled, so every week a team member does something different ... anyone else can step in and do ... another role...it also keeps it interesting ... helps retain staff as well because it's an even distribution of ... of responsibility // we've done a more informed net // started rotating them around ... to cover leave and ... better understand ... how each department operates //

Participants discussed working in teams and sharing time together stating how their skills matched thus making the team better and higher functioning. Prior experience was stated as important allowing associations to be made with current situations. A participant also stated that having a previous working relationship with someone and by capitalising on this relationship has helped retain knowledge, as it would not work quite the same without that relationship existing.

// we complement each other // better functioning, highly qualified teams within the organisation // past experiences is important // be more parallel because I'm part-time, she's part-time so we're trying to dovetail our time so that there's somebody here ... all the time // we've worked together so much ... not sure that it'd work quite the same on someone you hadn't worked as strongly with [previously] //

Teamwork was described as sometimes being uncomfortable. However, an established base between individuals assisted in creating understanding between each other thus building a stronger team.

// can be a bit awkward ... we've got a good foundation // comes down to whether people get on well or not // getting people to know each other on a personal level, which also helps build a team //.

A participant discussed keeping people skilled and providing them with challenging opportunities in order to avoid demotivating people and forcing them to start looking for opportunities outside the organisation.

// if you allow yourself or your team to become stagnant I think that's when people will start looking around for other opportunities //.

It was also stated that explicit procedures and processes ensured knowledge are retained within the department.

// prescribed methodology and you come up with an answer ... so I've documented all of that in a procedure //.

Despite explicit plans, it was acknowledged that knowledge sharing within the organisation through a proposed plan was potentially going to be ruined by other individuals who did not follow it.

// we had gone to all this effort of ... coming up with the idea and making a plan that would work ... to have it just done in a very strange way that was going to ruin the plan, had they continued, just because people hadn't followed the process //.

Others quoted examples of processes stating that companies need information to turn ideas into innovation. However, it was noted that no specific practice exists that individuals can adapt to become innovative, as creativity could emerge from a completely arbitrary process.

// need information to make decisions and to make those concepts into reality // how people come up with creative ideas...[no] particular process that it can rely on ... any process is fine, even something completely random //.

Providing individuals with the flexibility to complete their tasks by not micro managing or getting involved in day-to-day functions was seen as important. By giving individuals the task and direction, individuals are allowed to complete the task as they see fit, only seeking further clarification or direction as needed.

// given the mission; the instinct and they get on with it ... if they need further direction they'll come back to me ... if they don't need further direction they'll come to me and say it's done //.

Having a good record of accomplishment with management allows a person's work ethic to be recognised permitting acceptance in the event of something going wrong. Management are also generally seen to be open to ideas as long as ideas can be justified financially. However, in a resources downturn, gathering data to justify ideas to management can be difficult, as any ad hoc feasibility study funding needs to be prioritized. Participants stated that it was also important to keep management apprised of activities thus building a base.

// back up why I'm asking [for something] // it's important having ... your [managers] understand what you do // mixture of support ... gathered all the info but now I've got to get the buy-in // I would be surprised if it wasn't approved, but ... there's a cost involved they have to prioritise [resources] // The ability to make mistakes and not be chastised for the mistakes that we make //.

5.3.3 Recognition of Effort

This sub dimension relates to how the internal culture of the organisation in terms of recognition and rewarding effort affects individuals' intrinsic motivations to engage in creative and innovative behaviour.

Puts their head above the parapet

A participant discussed self-development stating that anyone who takes a risk by sacrificing their personal time and resources to better themselves deserves all the support that management can provide to ensure that the individual successfully completes their personal development initiative.

// if you put your head above the parapet then you deserve the support that goes with it //

In connection with self-development, another participant stated that it is important to give support to people undertaking such initiatives as individuals are seen as the source of new knowledge

// where you need to get your information from is people ... if you can't have [or] be given that support to do that, that makes it really hard //

Conversely, a participant commented on self-development initiatives and other individuals feeling bitter and threatened when someone tries to improve as they may end up reporting to the person who has developed himself or herself by undertaking the initiative.

// People resent somebody sometimes when they try to better their selves ... they got to be careful, because, ... the next thing you know, you're working for him ... he has bettered himself and ... he comes in in a different position and people go, "Oh, hang on, what happened here?" //

Recognising the need for something, taking a risk, and just doing it was described by a participant who did not seek any authorization prior to doing some work. This was done to assist colleagues who were struggling to efficiently utilise resources and generate data.

// no formal approval was sought ... to do this work ... I saw a real need for it ... all I had [was] a cry of help from site ... I simply did it //

A participant described how their manager took personal responsibility and a risk to support an idea that seemed unachievable further stating that this idea can be called creative and innovative, as something impossible was achieved.

// we had people in the organisation saying ... you're crazy, you can't do it... we proved them wrong ... but there are people that really put their neck out to support what we wanted to do... so you could say that was innovation //.

I've got a better way of doing this

Acknowledging contribution when a good job is done encourages individuals to be more creative and innovative.

// I say to you, you know ... you're going to get a pat on the back if it goes right. All of a sudden it's important for you to come back to me and say, "I've got a better way of doing this." ... it's a question of being able to go back to them and say, "Thank you, you've done a really good job" //.

Participants stated that acknowledging an individual's contribution straight away helps motivate them even more. This was seen as an incentive to work harder and smarter.

// Acknowledgement doesn't have to linger ... it helps if it is there at the start // I would acknowledge it and say thank you but I suppose that would be the reward // if you give them recognition, they'll work harder for you. If you just leave them, you know, they'll just do what they need to do //.

Continuous improvement for the next war

Having people with the right skills led on to comments about training and people willing to self-develop as well as develop through continuously improving activities within the organisation bearing in mind budgetary constraints. Providing a combat example, a participant stated that continuously improving processes was important as this allows an organisation to be creative and innovative, potentially capitalising on first mover advantage within the sector.

// continuous improvement for the next war you're going to fight ... everyone's trying to step forward ... and stretch forward faster than the ... opposition ... so that when you do face up to him [the opposition], you know, you're one step, two steps ahead // we're always looking to try and improve and do things better and with that function you need to think of creativity or innovation as mechanisms to improve that performance //.

A participant described continuous improvement as being a very repetitive process until something that efficiently enhances the activity is created.

// It is an iterative thing ... until you find something that works ... it is that changing, changing, changing, changing //.

Attending conferences, networking and training sessions as a team was discussed with participants stating that experiencing an activity personally is far more productive.

// what goes in your mind is what's important in each individual ... If you go on ... your own ... it's harder to portray ... it's far better off if you experience it //.

Networking as a source of prospective employees was discussed as this has helped some managers within the organisation recruit through industry connections rather than advertising. This strategy has worked particularly well for one manager who has managed to employ all his staff through networking.

// not through any job advertising. So ... the staff I've employed ... have all been through networking in this industry // there are many common connections ... people we know // she was at the previous company that I was at ... we both moved over at the same time into the same positions //.

Keeping in touch regularly with prior work colleagues was discussed as a good resource that allowed individuals to keep abreast of opportunities as well as the availability of previously utilised skills.

// I do keep in contact with them ... to see how they're going on a personal front but also for work purposes // when the opportunity came up here I let that person know and they joined us here //

5.3.4 Environment of Trust

This sub dimension relates to how the internal culture of the organisation in terms of building trust affects individuals' intrinsic motivations to engage in creative and innovative behaviour.

Mission command...end state

A participant discussed giving individuals' process responsibility to complete tasks as they see fit. This was seen as important as it allows individuals' to develop the most efficient way of resolving issues as well as complete tasks.

// "This is ... the end state ... go and figure out how we're going to get there," you know, and if you've got ownership of the process, you'll find the best way of doing that //

A participant discussed that they have task autonomy as long as they keep their manager apprised then they have no restrictions on completing tasks.

// I have a lot of freedom to make those steps and as long as I inform my Manager all the way along //

Conversely, another participant provided an example of a dedicated and motivated individual who does not see the need to publicize what he is doing.

// is very focused, he gets things done, he is very efficient, and he doesn't need to tell everyone what he is doing, he just gets it done //

It's giving people the authority, if you like, as well as responsibility,

Empowering individuals in various forms within the organisation was discussed with participants stating that giving people task ownership is important to motivate individuals to participate functionally. A manager stated that giving individuals the

choice to take their ideas or concerns above their management level is also important although, their staff would initially discuss ideas or concerns with them. Another participant stated that it was crucial to have a process that allows people to take responsibility within their own areas.

// empower them ... but also I want ... them to be able to do a variety of roles // I have a lot of freedom // it's giving people the authority, if you like, as well a responsibility // they are more than welcome to go and speak to my boss or my boss' boss, I've no qualms about them having a conversation with them // give them the freedom to act to get [it] done //

Empowerment was also described as an act of delegating with a participant stating that they distribute any issues and then just manage the process.

// I tend to pass it out to that department...and just basically ringmaster it //

Participants commented on the expectation for relevant information stating that it was a core requirement of each area to ensure that information was regularly updated as well as being resourceful and organised thereby not mechanically producing data.

// they're expecting that information to be up-to-date as well ... it's each area's responsibility // we're not just churning stuff out ... we've got to be creative...think it through ... organise ourselves //

Various participants discussed giving people ownership by providing them with required resources as well as support by listening to them with any skills lacking outsourced to competent people.

// I don't lack support... there are some skills that we don't have...so a lot of those aspects we outsource // my ideas ... might not always be accepted or used but I'm quite comfortable and feel like I'm listened to // if they have got a great idea that needs to be implemented, they will be provided with whatever support they need //

Giving people ownership and responsibility was further discussed in terms of management being open to ideas to allow creativity and innovation to emerge. This allows unusual ideas to be considered for their significance to the organisation rather than being disregarded for just being unusual.

// expect ... an openness in the hierarchy to ... look at innovation and creativity with an open mind ... able to ... say, "Yeah, okay, it's different but what's its value," and ... look at it from that point of view and not just stick it down as a formula ... and nobody sort of steps outside the square //

5.3.5 Summary of Elements that Foster Creativity and Innovation

The themes from participant comments discussed in this section cover ways in which creativity and innovation is being fostered within the organisation. Grouped into three main dimensions these elements are elements that nurture creativity, elements related to staffing and agentic behaviour, as well as elements related to actions by leaders.

Elements that nurture creativity include (a) giving authority and responsibility, (b) managing socialisation organically and inorganically and (c) engaging at lower agentic levels. Participants' highlighted autonomy and personal responsibilities coupled with a range of formal organisational activities designed to encourage interaction helped facilitate innovation and creativity.

Elements that relate to staffing and agentic behaviour include (a) environmental awareness by staff and (b) staff attitude and behaviour. Participants highlighted the need for flexibility and responsibility for ongoing development to encourage new ways of operating. Having environmental awareness or understanding of the resources that are available as well as awareness of innovation within the industry were highlighted as enablers.

Elements that relate to actions by organisational leaders include (a) leadership qualities (b) providing feedback and challenges and (c) recruiting the right people/skill sets. Participants' highlighted a range of leadership actions required including acknowledging staff contributions, setting challenges, hiring the right

people and skills, giving people authority and leeway and supporting initiatives or facilitating social interaction activities. These issues were seen to foster creative and innovative initiatives within the organisation.

5.4 Internal Environment

Participants spoke about how the environment within the organisation influences creativity and innovation with themes covering the Business Improvement (*BI*) department and how the lack of BI is influencing organisational culture, management attitudes with communication and common language issues, and a general lack of organisational character. Figure 5.4 summarises the identified themes below.

This sub dimension relates to internal environmental aspects stemming from management direction that serve to affect individuals' intrinsic motivations to engage in creative and innovative behaviour.

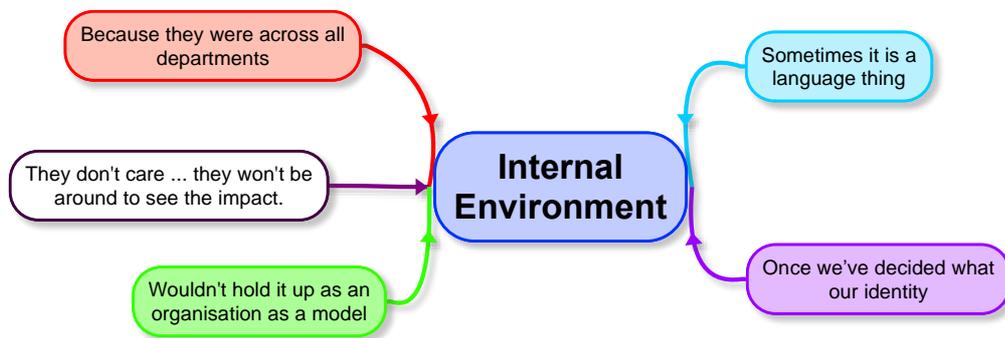


Figure 5.4: Internal Environmental Elements

5.4.1 Because they were across all departments

This was a very rich area of data with comments coming up in relation to the Business Improvement (BI) department. The business improvement department more fondly known as the “BI” department was highly symbolic due to its visibility throughout all hierarchy levels with its ability to communicate improvements throughout the organisation potentially dismantling any silos. This department became a casualty of a retrenching exercise due to high cost as well as a low focus and reduced priority being placed on business improvement activities by the

organisation. This was also department that was tasked with collating, reviewing, analysing, and rewarding new ideas and better ways of doing things within the organisation. The BI department was seen to foster relationships as well as encourage and reward creativity and innovation within the organisation.

// they were across all departments ... and you would be able to share that idea // there was a reasonable profile on business improvement and innovation // business improvement ... [made ideas] public //

Most participants saw the lack of a BI department as resulting in lost innovation within the organisation with ideas and solutions not being acknowledged or followed through consequently being lost. This also results in a silo culture, as solutions to common problems within the organisation are not being shared.

// I've had a couple of people call me to say, "I've got this great idea, who is left in BI?" and I've said, "There's no one, there's no BI Department // used to send out a list to notify the company ... that was recognized // so many fantastic ideas and there's just no avenues to explore it // We are still operating very separately in each department //

A participant commented that they were wondering if something was missing within the organisation after the loss of the BI department, as creativity was not being acknowledged or even followed through.

// Wonder whether we have lost something there ... don't see a lot of creativity being recognized // What do I do with this idea?" and I said, "You escalate it up the chain." And that's the last thing I heard about it //

It was however also noted by a participant that when individuals recognised issues being resolved by other colleagues, they tended to acknowledge these achievements regardless of formal feedback from management. This is a form of reward with colleagues recognizing and appreciating good work.

// when we see good things happen ... we tend to say, you know, that's really good and congratulations, but I think that's all about camaraderie between individuals //.

In connection to the lack of a BI department, a participant raised an issue relating to the age of the organisation stating that most people have recently joined the organisation. There is therefore a lack of understanding around how ideas can be progressed within the organisation potentially resulting in lost opportunities.

// if people have ideas that they want implemented, then they do need to escalate it, but our supervisors and leading hands are pretty new in their positions as well, so they probably would not know where to go after that //.

5.4.2 Sometimes it is a language thing

The lack of a common language was identified as affecting effective communication within the organisation as well as influencing and restricting task completion by excluding people from conversations taking place.

// it is a language thing... some of the language barriers ... doesn't actively take part in some of the general discussion // you would be the only one sitting there and you just feel totally excluded out of that conversation // find that is a really rude thing in this company // do it in meetings so that you can't understand //.

A participant snidely commented that although they were not too bothered about being left out of conversations, they would not mind covertly learning the language so that they could understand what conversations were taking place.

// don't lose too much sleep over it, mind you... I'm thinking, right-o. I really want to learn [language] so you can sit there and secretly know what they're talking about. Busted! [Laughs] //.

Other communication issues were discussed with participants stating that communication was not as frequent and prominent as they have experienced in other organisations with individuals resorting to internet news about the organisation, as

internal news releases were not that prevalent. Clear communication failures with a requirement for improved communication within the organisation were also discussed.

// Communications probably not as high as I've seen // I get it by Googling [company] on the Internet // not understanding why decisions are getting made // facilitate better ... communication structures // definitely communication breakdowns //.

Official communication was also discussed with an email issued in a Non-English language with the comment to Australians to translate the email into English using Google Translate. This causes confusion as an online translate service may not be 100 percent accurate resulting in a loss of meaning. Loss of meaning can also result from missing the nuances of the language as well as facial and hand expressions that can be detected from a verbal communication. This participant further highlighted the operating and communication dissimilarities followed by diverse departments across the organisation.

// He goes "Google Translate, use your Google Translate to translate it to English" ... different rules for different departments //.

A participant discussed essentialism between the diverse cultures that was resulting in tension across the organisation. Consequently, to ensure and develop successful communication across the cultures a new paradigm was suggested and implemented. A participant also highlighted the potential synergistic effect of bringing the two cultures together.

// [Different] cultures can sometimes stereotype each other and that can lead to conflicts... [consultant] suggested the Hubu way – which is a way to complement each other and a philosophy was developed based on that // we can take the best of both cultures to help this leadership and business evolve to a way that does work better //.

A participant highlighted a challenge of working with an individual whose first language is non-English whereby an issue relating to process uniformity was discussed and agreed on as a group. This individual however often broke the agreement, with the English speakers not really understanding why this was happening. It was also stated that this person kept working independently making it very challenging.

// he is working autonomously ... and I can't understand why //

5.4.3 Once we've decided what our identity

As the organisation is a division of a foreign owned conglomerate, there are two distinct cultural groups present within the organisation with eastern and western styles of communication, leadership, language, and identity. Participants discussed issues with understanding the organisations identity stating that once a unique organisational identity was established then the operating philosophy would naturally flow through thereby influencing the organisational structure that is currently seen to be lacking. Bringing the two diverse cultures together was highlighted as important with the organisation potentially taking the best from the diverse cultures and integrating that within the organisation.

// Once we've decided our identity ... we can work out what leadership objectives and functions and targets and goals we want to flow down from there ... there would be huge benefits in doing that //

5.4.4 Wouldn't hold it up as an organisation as a model

In addition to issues with culture, challenges relating to effective communication were highlighted. A participant also stated that the organisational hierarchy had too many director levels with some unwarranted positions. Participants compared and commented that directors from different cultural backgrounds had different management styles and were unmindful of the long-term consequences of their actions.

// Lot of problems in communication ... wouldn't hold it up as an organisation as a model // because of the setup, they are called directors // management style is different // Western director who understands the

implications // Feels as though everyone was given those positions as a reward // responsibilities aren't clearly defined // company as a whole is top heavy ... it's crazy the set up ... we have so many Directors //

A participant stated that they felt there was no real encouragement from management to be innovative with an individual providing an example of their previous workplace highlighting how management in that organisation acknowledged and rewarded extra effort.

// nothing within the ... operational structure that encourage[s] innovation // a highly functioning sort of organisation ... if people went to Friday lunch and didn't come back the management didn't really mind too much because, you know, the people had performed over and above their work during the week //

Lack of transparency and communication from upper management was highlighted as a gap affecting decisions that were being made at different levels within the organisation.

// the gap that happens between where I'm and where upper management is, is just because they have got lots of other things that are affecting their decisions that they can't talk about or whatever //

Conversely, other participants commented that the leadership culture was extremely proficient with everyone fully informed within the organisation.

// everybody knows everything that's going on // the leadership culture is ... highly professional, it's very open and communicative ... and that's from the very top down //

With another view expressed that the organisation predominantly with an eastern influence lacked effective leadership and organisational objectives that are validated by management.

// we struggle for leadership culture ... it's lacking // we need ... to have overarching organisation objectives and descriptions ... and for those qualities to be demonstrated by the leadership team //.

Conversely, some participants discussed liking their work stating that the role was wonderful with a variety of exciting projects happening. A participant also stated that in the event of any issues they were contactable after hours due to the close relationships they had with their colleagues. This participant further stated that others within the organisation should also build such close relationships.

// the actual job itself is brilliant // interesting concepts and projects happening ... so ... pretty good // I suppose, know each other well enough ... can always ring me ... if there's an issue // some people are very strict and restrictive and ... not willing to step outside that work environment, but ... life's short ... you need to ... spend more time with the people you work [with] //.

Participants discussed issues that the organisation has had in establishing operations within the Western Australian environment with comments that there have been issues since project inception. Many of the issues were relating to the organisation selecting an expatriate construction organisation when that particular organisation did not have any Western Australian construction experience making managing the construction phase extremely difficult.

// issues ever since the project started ... a lot of that was caused by the timeframe and the budget ... the fact that [organisation] awarded the project to [company A] who had not built anything in Australia, and I think incredibly cheap price and an incredibly short timeframe ... there you've got the formula for where we're at today ... the problems ... just beyond what they'd ever envisaged. And they just struggled from day one ... surprises every day and it just goes on and on //.

A participant provided an example of a challenge that was encountered on site resulting from individuals ignoring existing available data. This data eventually prompted changes in exploration as well as process.

// information has been available for a couple of years and ... it hadn't been done before ... it was obvious that something else was happening ...so that was the trigger to go to somewhere else... [exploration and process] will have to change as we go that way //.

Not knowing what drives the strategic planning in the organisation was stated as an issue with information and ideas being supplied but ignored at a higher level. A comment was made that such lack of feedback can sometimes stimulate and encourage generation of new ideas. However, this stimulus is only in the short term as in the longer term it tends to demotivate and discourage.

// we keep feeding ... information ... that should modify what is happening, but there is something else that is going on, that is stronger, that we are un[aware of] ... perversely sometimes it makes you think of new ideas ... but in the longer term, I think ... it makes people a bit down //.

A participant discussed the current operating environment stating that things are being done within the organisation to accommodate the business at its current stage with processes continuously being improved. Another participant conversely stated that although the business had evolved, it was still utilising out-dated practices with the organisation needing to update its practices.

// we do things to fit in with where the business is at the moment ... definitely a work-in-progress // some of the processes and procedures that we have in place now were at the beginning ... we need to move with the times //.

5.4.5 They don't care ... they won't be around to see the impact.

Organisational cultural issues were discussed with a participant commenting that some senior managers were not concerned about the consequences of their actions as they will not be around long enough.

// [Manager] won't be here in 30 years, he doesn't care... won't be around to see the impact //.

Ensuring that initiatives were financially viable was discussed with participants stating that sometimes it was hard to make people understand the value of initiatives. Participants also discussed putting a case forward and doing a cost benefit analysis as a means of justifying expenditure, as some people are reckless with spending limited organisational resources.

// hard part, getting these guys to understand that the cheapest option is not always the best // cost benefit analysis // without running down some ridiculous path of expense // Quite keen to spend money when it's not theirs //.

5.4.6 Summary of Internal Environment Element

Themes from participant comments discussed in this section cover ways in which creativity and innovation are impacted by the internal organisational environment. Elements examined here can be grouped into two main dimensions that is; elements related to staffing and agentic behaviour and elements related to actions by leaders.

Elements related to staffing, agentic perceptions and behaviour includes (a) dedicated resources: (b) language and communication, and (c) culture. Participants highlighted the impact of the lack of dedicated resources to coordinate innovative ideas, organisational cultural issues, management attitudes, communication issues, and a general lack of organisational identity. Difference in language was highlighted as the most individuals within the organisation have an eastern heritage and communicate in their native language rather than English. This also impacts the organisational identity as there is confusion around whether the organisation is an

eastern organisation operating in a western environment or vice versa. This has implications towards managing expectations of internal and external stakeholders.

Elements related to actions by leaders include (a) management decisions and (b) organisational culture. Participants highlighted how decisions made by management affect the organisation in a broader context such as the decision to disband and make redundant the BI department resulting in an overall dampening of creativity and innovation within the organisation. Other issues identified are cultural in nature and stem from the different cultural background and leadership styles that arise from being a foreign owned entity. Participant comments address issues such as short-term focus and tenure, which reduces accountability.

5.5 External Environment

The external environment generally refers to a larger global context within which an organisation operates. However, in this case, the term is used here to distinguish and integrate external factors that are not a result of internal organisational strategies or initiatives but nonetheless influence creativity and innovation within the organisation. These factors include personal situational factors such as family commitments. This external environment not only influences how an individual interacts with others but also how knowledge is shared. Participants spoke about how the external environment influences creativity and innovation in the organisation, with these themes summarised in Figure 5.5 and discussed in detail below.

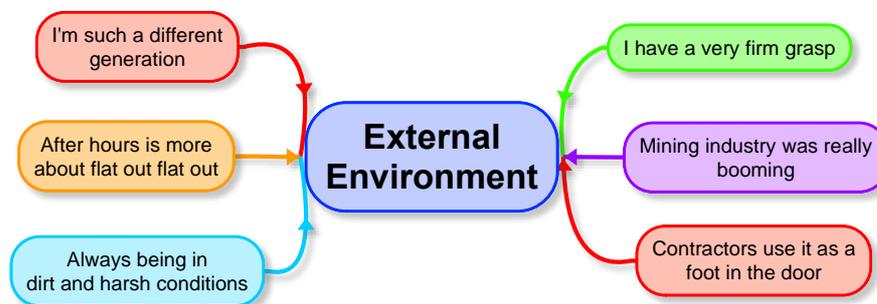


Figure 5.5: External Environmental Elements

5.5.1 I'm such a different generation

Interactions were discussed in terms of age groups and the resultant dynamics taking place on site with an individual stating that people seem to have different priorities and perspectives and therefore how they prioritise their free time.

// Gen Y [she] is focused on eyelash extensions and hair extensions versus [X] who is driven by family and time with her family....interesting to see how people prioritise their time ... I think 'Gosh, I'm such a different generation //.

5.5.2 I have a very firm grasp

A participant discussed the general business environment and in particular the situation within the resources industry with the lack of opportunities for professional people after the 2007/8 global financial crisis (GFC). A participant commented on the current lack of suitable positions within the sector and therefore how they were hanging on to their current role.

// There is not a lot of work out there at the moment and luckily enough I was able to pick up this position, so I'm kind of holding on to it [laughs]. I have a very firm grasp! //

5.5.3 Mining industry was really booming

Before the onset of the GFC and the ramifications throughout the business environment, the mining industry was booming. In recent times however, people have started seeking more stability and security instead of being transient although the organisations preference is to be lean by employing people on a contract or part time basis.

// I returned to Australia ... just as the mining industry was really booming ... I didn't have any trouble getting work ... given that the climate was so buoyant for ... basically anyone with any skills in the mining industry ... around 2007/8... until more recently... probably a good time to revert to a full time employee // contractors ... you have more flexibility, it's a lot

easier to get rid of someone on a contract // other three are part-time // working with full-time employees ... I think the team feels stable //.

A participant jokingly commented that there are no assurances of retaining your role by being a permanent employee in the long term.

// by the very nature we're all transient. It depends on the time scales you're talking about ... there's no guarantees, mate, about permanent employees. [Laughs] //.

A participant discussed innovation within the resources industry stating that real innovation only happens when an organisation experiences a resource shortage. Thus restricting the scope for innovation in most newly established resource organisations with innovation predominantly considered as continuous improvement in nature.

// The only time you're going to get innovation in the mining sector is when you start hitting resource constraints ... innovation [is] incremental at best [and not] ... disruptive ... by its general nature //.

5.5.4 Contractors use it as a foot in the door

Using external contractors as transient employees was discussed with comments such as contractors use open positions to get into the organisation and then look around for opportunities after they have some job security. This results in leakage of knowledge and discontinuity within departments as the contractors are only around for short periods.

// Contractors use it as a foot in the door and then they see what else is around and then they apply for other positions ... so you do lose a few people //.

In some instances, the organisation has chosen to engage skilled contractors and consultants on a contract due to the nature of the work and their areas of expertise.

*// we outsource to consultants and engage them on a short-term basis...
mostly because a lot of our work ... we do is quite specialised //.*

5.5.5 Always being in dirt and harsh conditions

The natural resources industry is seen as operating in very tough environments, with temperatures above 35 degree centigrade throughout the year with minimal rainfall and with the occasional tropical cyclone requiring site evacuations. With a fly-in, fly-out workforce, back-to-back workers for the same role are required and usually a 2:1 roster is operated. A 2:1 roster is a work roster over a three-week period signifying that workers stay on sites that are usually in fairly remote locations for 14 days in small demountable buildings colloquially known as “dongas”, working 12-hour days with the following 7 days in the three week period off at home as R&R (Rest & Relaxation). Typically, the site demographic is a low experience 90 percent male blue-collar worker.

Participants commented that the onsite roster could be tough with the regimented 12-hour days for 14 days straight seen as control enough. These long hours, production demands and constraints make socialising on site very challenging.

// Two weeks on site can really wind them [up] // the harsh environment always being in dirt and harsh conditions // hard being onsite, having team based events... affect[s] production // typically your site personnel tend to be the lesser experienced and generally male, from my experience [laughs] //.

5.5.6 After hours is more about flat out flat out

An individual’s personal situation with family and children dictates how much time they can spend after work on socialising with colleagues’ as one individual stated that personal commitments restrict socialising.

// I don’t think [she] does too much. She’s got two kids, she’s a single parent so after hours is more about flat out, flat out // I used to, until I had three kids [Laughs] so now only on an absolutely as required basis // not a lot, I think, because everyone’s busy with their own lives //.

Some individuals were also not willing to connect at a personal level thus limited interactions and building relationships

// some people are very strict and restrictive and ... not willing to step outside that work environment //

Conversely, a participant commented on their manager's personal situation, as the manager lived further away stating that they felt that being antisocial did not constrain how innovative their manager was.

// [He] lives further away ... so he doesn't stay back ... to have a drink because that means that he'll be getting home [late]. I don't think that has any reflection on who he is as a manager ... neither does that have any reflection or impact on whether he's an innovator or a contributing member to the department //

5.5.7 Summary of External Environment Elements

Themes discussed in this section cover ways in which creativity and innovation is impacted by the external environment. Elements examined here can be grouped into two main dimensions that is; elements related to agentic perceptions and behaviour as well as elements related to the broader external environment.

Elements related to agentic perceptions and behaviour includes (a) personality traits and (b) the environment. Participants highlighted elements such as generational differences and how these influenced social interactions, the personal situations of individuals, which influenced their willingness and ability to engage with after-hours activities, the site environment at a remote location and the boom and bust cycle, which affected career opportunities.

Elements related to the external environment include (a) personal situations of individuals and (b) the Global Financial Crisis (GFC). Participants highlighted elements that broadly deal with an individual's personal situation. The dynamics of the resource sector were also highlighted with the main issues identified as the 2007/8 GFC, which resulted in a lack of professional positions within the sector

resulting in individuals opting for job stability, whilst the harsh environment on remote mine sites was also noted as impacting individuals ability to interact.

5.6 Chapter Summary

This chapter has presented analysis from interview data from thirteen respondents and two distinct departments within the research organisation. The data reveal insights into four key areas relevant to managerial decisions, internal and external contextual factors that enable adaptive leadership to leverage on intellectual capital management thereby encouraging, facilitating, and positively influencing social capital, creativity, and innovation. Key features of hindering factors, fostering factors, external and internal factors and the interrelationships between are identified from this chapter.

Three groups of factors; individual, relational, and organisational were identified from the literature review in Chapter 3 and discussed using the proposed framework in Figure 3.1. Analysis of data shows that these give rise to tension within the organisation. Additionally, the analysis of findings suggests that there are specific factors within each of these groups that need to be considered to ensure adaptive leadership provides a context for creativity and innovation.

Individual factors include social capital, human capital, and intellectual capital as well as diversity. Relational factors include managing socialisation, interactions, and communication. Organisational factors include culture, emergent properties, knowledge management, and learning. Elements from each of these factors were seen to hinder and/or foster creativity and innovation within the organisation. Some salient similarities and differences between the literature review framework (Figure 3.1) and the relationships between key areas of data (Figure 5.1) are noted.

For instance, individual factors include human resource related factors such as effectively managing recruitment, staff turnover and employee wellbeing. However, it was noted that these factors were not always well handled and this affected the organisational culture and conditions that foster innovation.

Relational factors include managing socialisation to encourage effective interactions and communication within the organisation. However, participants highlighted that interactions were not effectively taking place often due to language barriers that restricted communication.

Organisational factors include effectively managing culture and climate as well as managing knowledge and learning within the organisation to foster creativity and innovation. Participants however highlighted issues such as expatriates not being around in the long term to see impacts of their decisions, uncertainty of organisational identity as well as not holding the organisation up as a model to emulate. Participants also highlighted that managements should ensure that creativity is not linked with the lack of credibility, but is instead linked with appropriate rewards, and adequate resources should be provided

A more detailed discussion of similarities and differences with their implications for theory and practice forms the basis for the discussion following in Chapter 6.

6 Chapter Six: Discussion of Findings

6.1 Introduction

This case study research used the lens of complexity leadership theory in two departments of a single resources organisation to investigate the question:

How can Adaptive Leadership leverage on intellectual capital management to positively impact on social capital, creativity, and innovation?

Based on the perceived need for better understanding of the links between adaptive leadership, knowledge management, social capital, creativity, and innovation, this research question was further broken down into five objectives that assist in answering the research question.

1. Investigate how adaptive leadership is operationalized in the resource sector.
2. Explore how creativity and innovation are generated internally from informal agentic interaction.
3. Gain insights into how system level self-organisation emerges from informal agentic interaction.
4. Understand the impact of operationalizing adaptive leadership on organisational social capital particularly transient social capital.
5. Examine how adaptive leadership can influence social capital especially transient social capital.

In light of existing theory and practice with a focus on implications for this research organisation, this chapter discusses the study findings below in three main sections grouped by the research objectives. Research objectives (1) and (2) are grouped together under the title Operationalising, (4) and (5) grouped together under Social Capital with research objective (3) discussed under Interactions. Figure 6.1 summarises these objectives and interrelated themes below for discussion.

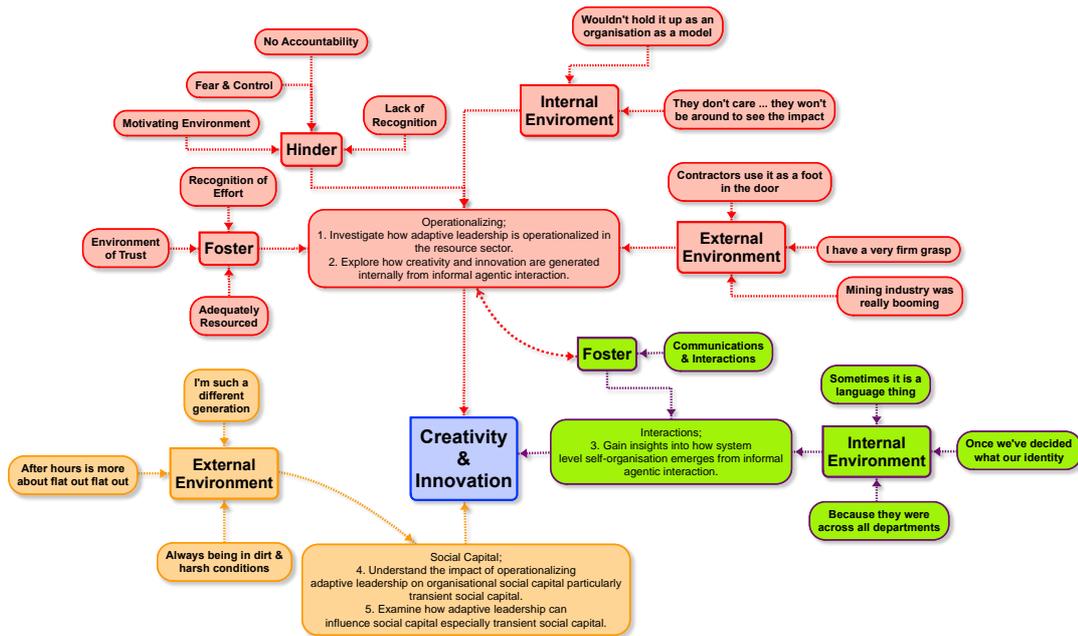


Figure 6.1: Summarised Themes for Discussion

6.2 Operationalizing

The two research objectives grouped under this category are

1. Investigate how adaptive leadership is operationalized in the resource sector.
2. Explore how creativity and innovation are generated internally from informal agentic interaction.

Seen as closely linked through the data analysis, these two objectives are discussed together. Data analysis revealed that there were some elements of adaptive leadership present in the case study organization but these elements existed alongside other practices more closely aligned with cybernetic leadership. Analysis also suggests that operationalizing adaptive leadership within this organization is not fully complete. Despite this, participant perceptions of factors that hinder and or foster creativity and innovation provide insight into current organizational practices that both facilitate and limit the extent to which informal agentic interaction can generate creativity and innovation.

To understand the dynamics of human capital as well as how knowledge is created, shared, hoarded, or retained within this research organisation, participants were asked to describe the makeup of their departments, the relationships between the

individuals in their departments, and how knowledge was created and dispersed within the team. Retaining knowledge within the organisation is critical as it can take a long time to reap benefits of training investments made in, as well as knowledge accumulated by, individuals (Caroline Martins and Meyer 2012; Ulrich 1998). Building commitment amongst agents to prevent knowledge leakage also involves engaging their emotional energy and attention (Caroline Martins and Meyer 2012; Ulrich 1998) that results in agents building meaningful relationships amongst each other to share knowledge. With, the “only certainty” seen as “uncertainty,” this make effective management of organisational knowledge crucial for competitive and comparative advantage consequently making knowledge creation and retention critical for organisations (Nonaka 1991, 96).

Knowledge sharing, training, and generally informing and keeping agents “multi-skilled” are important for knowledge creation and codification. Although a “commitment” is required from the organisation and group that, “all ideas and concepts should be viewed and not just tossed out.” A “specialist” versus “generalist” human capital view within organisations identifies specialists with field specific knowledge whereas generalists are skilled in a variety of fields (Kang and Snell 2009, 68).

This is consistent with the finding that some individuals were generalists with multiple skills they could deploy to a variety of areas within the organisation. These individuals contrast with the large proportion of resource organisation on site staff who tend to be specialist in nature for example; individuals require a special licence and experience to drive dump trucks on site or specialist training to be able to maintain the dump trucks that are each worth in excess of \$7 million.

Fostering commitment involves appealing to the passion and devotion of individuals thus engaging them in how they relate and feel about the organisation and group (Caroline Martins and Meyer 2012; Ulrich 1998). As part of knowledge creation and sharing, job rotation and multiskilling enables departments to keep functioning and servicing its stakeholders when staff members were away or on training courses.

The assumption of the existence of free information flows using readily available technological means is incorrect as in most corporations information is often withheld and treated as a valuable commodity (Brown and Duguid 1991; Feldman and March 1981; Rangan 2015). Findings are consistent with this view and indicate that at an organisational level some managers were reluctant to share knowledge with a preference towards withholding it. This was also noticeable at lower levels with some individuals viewing knowledge as a source of power thus creating a silo mentality within the organisation.

As a counter to knowledge silos, differences between fulltime and transient employees were seen as becoming “parallel” to and “dovetailing” with other individuals thereby ensuring that the organisation had a “more informed net” allowing adequate knowledge to be retained within the organisation to operate effectively on a day-to-day basis. The relationship between “dovetailing” and being “parallel” is the “optimal relationship” between responsibility and authority over knowledge within the organisation (Adler 1989, 93). Being a transient employee also involves working closely as a team and ensuring that everyone within the team is aware of uncompleted current tasks. The majority of the roles in resource organisations are predominantly a fly-in, fly-out (FIFO) workforce that requires a back-to-back arrangement. A back-to-back arrangement involves two individuals doing the same role but at different ends of their FIFO roster whereby when one individual is on their break the other individual is working the role. In such an arrangement, dovetailing and being parallel become crucial to maintain continuity.

One of the possible adverse impacts for the national economy of being naturally resources rich is the “reallocation of production away from the manufacturing sector” (Frankel 2012, 2). However, this is potentially cyclic, happening within a commodity boom cycle with the effects reversed during a commodity bust. Because of commodity price volatility, it is also likely that employees who have minimum knowledge and experience within the industry become redundant first (Sheerin 2015). The boom and bust cyclical nature of the sector introduces complexities with staffing requirements within the mine life cycle that usually have a finite resource life. Figure 2.2: Mine Life Cycle Stages proposes that; the requirement for staffing increases during Stage A with ramp up activities, in Stage B the staffing requirement

is stable with a steady rate of production and in Stage C, the staff requirement decreases with ramp down activities. This has consequences as during a boom cycle, labour shortages exist whereas in a bust cycle an organisation has to restructure in order to remain cost competitive, potentially resulting in the organisations inability to capitalise on creativity and innovation or retain knowledge.

There is also a possibility of organisations depreciating their intellectual capital by restructuring and downsizing operations that ultimately results in the deterioration of intellectual capital (Ulrich 1998; Schmitt, Borzillo, and Probst 2012). Within this research organisation, restructures and redundancies are seen as barriers to knowledge retention. These make agents feel demotivated and withdrawn by witnessing knowledge loss from redundancies.

It has been found that during times of economic downturns or redundancies, individuals remaining within the organisation also tend to feel closer to each other, having been part of a shared experience (Pfeffer 1985). However, this was not necessarily the case in this research organisation where conflicting demands and loyalties during economic downturns impacted on knowledge sharing and retention. Managing people within the organisation was seen as difficult as it involved selecting the type and level of knowledge to retain. However, the welfare of individuals made redundant was felt to be equally important thus making it difficult to bring the team together in contrast to Pfeffer's (1985) suggestion. The result is an environment of decreased knowledge sharing. From a creativity and innovation viewpoint, due to the potential loss of tacit knowledge, making a decision around what organisational knowledge to lose or retain is challenging.

Positivity within the organisation during times of redundancies is disrupted potentially by understaffing and increased workload stress for the remaining staff leading to concerns over job security and in the process distressing and demotivating staff (Parton and Ryley 2012). Within this research organisation, it was noted the employees remaining after restructuring were fearful about retaining their jobs resulting in dampened creativity and innovation.

Due to the dynamic nature of the resources sector, within this research organisation, individuals played it safe and looked for job security and stability through reduced voluntary movement. This is particularly evident after the 2007-2008 global financial crisis (GFC) where job security has become increasingly important (Parton and Ryley 2012; Randolph-Seng et al 2015).

Creating redundant capacity within an organisation is an alternative concept to creating staffing redundancies (Nonaka 1991). Redundancy in this context relates to distributing intelligence and making data widely available thus making organisational agents self-aware and system aware. Such organisations have widely distributed intelligence networks that tend to exhibit redundancies at multiple levels (Uhl-Bien and Marion 2009). This results in network inputs from multiple sources such that an interruption in one mode of input will not disrupt the whole network, thus making the network robust and complex (Uhl-Bien and Marion 2009). This also makes the process recurrent (Cillers 2000b) by facilitating the transfer of tacit knowledge between system agents as well as allowing the spread of newly generated explicit knowledge (Nonaka 1991).

Within this research organisation, cross training or strategic rotation can assist in building such redundancy as it allows agents to understand the business from different input sources thus smoothing the transfer and flow of organisational knowledge. The findings however also indicate that rather than cross training used to foster creativity and innovation within the organisation, this strategy was undertaken specifically and deliberately as a knowledge sharing activity.

There appears to be some tension within this research organisation as some managers utilise the “mission command” philosophy. This philosophy advocates giving agents authority and ownership to arrive at the “end state” as they see fit. Following a pre identified codified process in itself conflicts with arriving at the “end state.” Following a standard laid down process effectively stifles creative thinking creating tension between processes aiming to ensure conformity against a philosophy of freedom to achieve “end state.” Tension is also an essential condition to stimulate interactions thereby generating interdependencies amongst the organisational agents in the process enacting adaptive leadership (Schreiber and Carley 2006).

Mission command philosophy is predicated on the premise of giving individuals freedom and initiative thus increasing decision-making when advance planning of operations is difficult and uncertain (Bezooijen and Kramer 2014). Mission command also increases flexibility to deal with unforeseen events by delegating accountability in the process stimulating creativity throughout the organisation (Vogelaar and Kramer 2004).

Standard operating procedures and documenting processes facilitate the retention of collective corporate intelligence, with a managers' main function seen as increasing connectivity amongst agents to enhance cooperation and learning (Borzillo and Kaminska-Labbé 2011). Collective corporate intelligence took place within this research organisation through regular meetings, workshops, and brainstorming platforms to share and interact.

Brainstorming is a process that organisations use to generate ideas (Kohn and Smith 2011; Sutton and Hargadon 1996) or solutions for current challenges. Within this research organisation, the most difficult part in brainstorming was initiating the first step for individuals to codify and subsequently improve processes. These sessions were more overall views of issues on hand, as managers' recognised intended solutions but needed to know that all bases were covered.

Within this research organisation, for activities designed to deliver new ideas through processes such as brainstorming, there appears to be an almost opposite force that conflicts with the use of such activities that is, managers instinctively guide solutions. This process known as "priming" is where managers "subconsciously" establish desired outcomes within brainstorming sessions in order to influence the resulting behaviour of individuals and outcomes delivered (Dennis, Minas, and Bhagwatwar 2013, 195). Findings indicate that within this research organisation, interactions and meetings are also seen as a form of brainstorming and a means of increasing connectivity amongst agents.

"Open-innovation" is a process by which an organisation interacts widely with its external environment to acquire ideas or advance its own ideas (Chesbrough 2006, xxiv). Within this research organisation, the use of consultants to conduct specific

projects is potentially an open-innovation activity as it is a means by which the organisation acquires external ideas. However, some individuals viewed consultants negatively and suspiciously as people who were just using the organisation as a means to join the organisation and sector. This potentially negatively affects creativity and innovation opportunities.

Ownership of the “intellectual property (IP)” for work done by consultants engaged by the organisation is seen to belong to the consultants and is therefore an issue for the organisation. This represents a knowledge retention risk for the organisation. This knowledge is not internally stored, is non-exclusive easily purchased and widely available to competitors. By competitors exploiting this knowledge, a potential loss of control risk exists for the organisation (Chesbrough 2006). Thus, there is a tension between bringing in consultants to support open innovation and loss of competitive advantage through the possible sharing of the resulting knowledge with competitors.

When adapting knowledge retention strategies an organisation faces “integrate-or-relate” dilemmas with the prospect of internally integrating acquired knowledge or relying on consultants as the external mode of knowledge retention (Lichtenthaler 2011, 82). A lack of current research on knowledge retention that deals with knowledge leakage when long serving knowledge workers leave the organisation also exists (Levy 2011). The integrate-or-relate dilemma, in addition to the leakage of knowledge, has implications for this research organisation, as there is heavy reliance on transient social capital in terms of external consultants, thereby having an adverse impact on internally capitalising on creativity and innovation.

6.2.1.1 Workers

Knowledge workers are seen to not only possess the necessary skills, experience and competence that make them more effective but also complement the team skillset allowing the team to function efficiently. By creating associations with their experience, this allows agents to determine quickly what is required in specific instances.

Organisational workers have effectively become “volunteers” with an innate ability to move around and find multiple job opportunities based on the skills and

qualifications that they possess (Drucker 1992, 100; 1998). Knowledge work demands continuous learning and teaching on the part of the worker (Drucker 1999) as the worker has some ability to choose where they work (Roper 2013; Ulrich 1998). During the recent mining boom when there were labour shortages, the ability to move around easily was a major issue. Despite the mining downturn with reduced opportunities, this issue is still current and pertinent in relation to highly skilled workers.

Working in teams is critical to knowledge creation and learning within organisations as individuals within teams can constantly interact and reflect on the diverse meanings that are drawn by the different individuals thereby challenging them to reassess any ambiguous meanings, resulting in new knowledge and learning (Nonaka 1991). This in turn allows rich connections to develop and flourish as more connections increase the possibility of several viewpoints forming new information thereby strengthening intelligence and fostering self-organisation (Plowman et al 2002, 192). The environment is therefore not seen as independent from the organisation but is socially constructed and reconstructed as connections are formed allowing information to be dynamically analysed and addressed (Hatch and Cunliffe 2006, 76). Within this research organisation, due to cultural diversity as well as tension between eastern and western management ideologies, creating and nurturing rich connections across the two cultures was challenging with information restricted to members of different silos or totally withheld.

6.2.1.2 Right People

This research organisation can replace existing talent or buy in new talent through the process of knowledge acquisition thus increasing competency through integration, however, this is only practical when talent is readily available (Gebauer, Worch, and Truffer 2014; Ulrich 1998). In the case of a skills shortage, this becomes a risky proposition as knowledge acquired may be costly, may not be the right knowledge, or be at the desired levels of competence. Organisational management also plays a key role by brokering relationships amongst agents thereby coordinating the right people who can capitalise and build on opportunities (Dess & Shaw 2001). This is easier with longer serving agents as the more professional experience agents possess allows the organisation to capitalise on these capabilities as well as the way

they have previously interacted and done things. In some cases, it was more efficient and economical for the organisation to outsource projects to the external mind.

Information sharing, understanding feedback, and identifying improvement opportunities becomes much easier when managers recruit people with the right skills (Pfeffer and Sutton 2013). Recruitment was seen to be easier with previous knowledge of an incumbent's capability thus ensuring the right fit, as otherwise managing out wrong individuals was an arduous process resulting in demotivation to the whole team. The organisation's probation process was seen to be inadequate with not enough pre-employment due diligence done as candidates were sometimes seen to pretend to fit in just for the duration of their probation period. Recruiting the right people for the organisation is important and managers need to look for people whose values fit with the organisational values (Kavanagh 2014). This was strongly supported by the research findings.

Due diligence in selecting the correct candidate was seen as an important issue with two main roles of the HR department identified as being "fair" and "transparent" as well as "ethical" in the recruitment and selection process (de Beer and du Toit 2015, 210). Placing right people in the most important roles helps organisations have a competitive advantage and survive (McCauley and Wakefield 2006). However, within this research organisation, placing untested people in important or senior roles was an issue. This potentially compromises the two main roles of HR as discussed by de Beer and du Toit (2015) dampening creativity and innovation as promotion and progression within the organisation is seen as unlikely for most.

Within this research organisation, people with the right skills were seen to be high performers and "ideas kind of people" who encouraged and motivated their peers to perform at higher standards. Study participants are also all Gen-Xers as seen from the demographic profile in Table 4.1: Participant Profile, Gen-Xers are individuals who are born between the years 1965-1980 (Tang et al 2012). They prefer to follow the lead of more experienced peers thereby seeking out and implementing the best innovative ideas (Hessen and Lewis 2001). Gen-Xers also value having clearly linked organisational strategies to direction (Hessen and Lewis 2001). With no obvious or dedicated resource within the organisational structure to promote

creativity and innovation, the presence of the right people within the organisation, did not foster such activity. This indicates that within the context of this resource organisation, facilitating and fostering creativity and innovation needs to be more than just a recruitment strategy.

This research organisation also needs to be attentive to building trust through the organisational processes. Trust stimulates innovation, leads to greater emotional stability, facilitates acceptance and openness of expression, and encourages risk taking (Ribiere and Sitar 2003). Trust and confidence in management are prerequisites for effectively managing knowledge within the organisation (Kalkan 2008).

The actions of people in authority within this research organisation are of major influence both positive and negative in developing a trust culture. Their cumulative actions help determine the organisation's internal climate. Imposing dramatic control hierarchies or even innocently telling capable group members how to do their job shows can be seen as showing disrespect for the individual and erodes trust (DePree 2003) that usually results in demotivation and reluctance to cooperate and share knowledge. Sharing control with employees' amounts to a manager showing trust that employees have required motivation and skills to complete tasks on hand thus increasing employee commitment ultimately retaining knowledge (Caroline Martins and Meyer 2012; Ulrich, 1998).

Interacting, discussing ideas, and sharing knowledge are easier with trusted individuals (Casimir, Lee, and Loon 2012; Gurteen 1998). Within this research organisation, a lack of trust with some individuals taking credit for work done by others resulted in agents withdrawing from sharing their views. Communicating and letting people know about developments will assist in building a level of trust in management within this research organisation. The time spent in the company of others also results in a higher degree of trust amongst the individuals (Patulny 2011). Findings support the advantages of spending time together and highlighted attending after work functions, which build rapport and trust amongst individuals.

6.2.1.3 Sharing

Many organisations are becoming more complex and interconnected making knowledge more fragmented and challenging to identify, share, and externalise (Knoke, Wuest, and Thoben 2013; Zack 1999). This resource organisation mines, processes and exports a homogenous natural resource at pre-agreed contracted quality tolerances. Thus, for organisations that offer such a homogenous product, a knowledge codification strategy to increase internal knowledge sharing and efficiencies is suitable (Bettioli, Eleonora, and Grandinetti 2012). Codifying knowledge by sharing was seen as critical with knowledge explicated and documented in company policies, procedures, documents, or job descriptions that detail how a specific job needs to be done. Knowledge is also formalised within the organisational structure by maintaining such documentation in predetermined and identified locations. The tension that arises is that codification can stifle innovation as agents are expected to follow standard procedures rather than find new solutions.

Dedicated departments that pool knowledge and encourage knowledge sharing through relationships can potentially assist in managing complexity within the organisation (Surie and Hazy 2006). This ensures consistency and standardization in processing and quality of product within this research organisation allowing corrections to tolerances as required. However, it was found that standardization could result in the loss of initiative and creativity with functions performed mechanically in a standard pre-defined manner.

The loss of a visible organisational symbol (Hatch and Cunliffe 2006) in the form of the Business Intelligence (BI) department that supported and encouraged innovation has resulted in the dampening and leakage of creativity and innovation from the organisation. Symbols are important means by which organisational members convey group assimilation, individuality, principles, and philosophies (Mueller and Schade 2012).

6.2.1.4 Functional Participation

Sharing and exchanging information freely creates a sense of camaraderie and ownership within this research organisation, thus assisting agents in uncovering the organisation's core values (Andrews and Knowles 2011). This makes tacit

knowledge sharing a critical activity for creating knowledge within organisation's (Nonaka 1991). However, due to partitioning and homogeneity, functions in traditional organisations are setup around a limited array of responsibilities that restrict and limit decision making to defined position roles (Uhl-Bien, Marion, and McKelvey 2007).

This has the potential of dampening functional participation and consequently creativity at lower levels as individuals learn to rely on instructions on what to do as others possibly control their actions. This behaviour labelled as "learned helplessness" (Maier and Seligman 1976, 4) is prevalent within this research organisation with individuals dejectedly asking why they should keep coming up with new ideas. Some managers within this research organisation however recognise the need to be inquisitive, honest, and open to new learning through asking the right questions to increase understanding and consequently the quality of output from the whole team.

It would appear that the structure of this research organisation is around key processes managed by different directors, with the product flowing through and being value-added at each process juncture. Such partitioning of the organisation by process as well as the product being homogeneous restricts and limits decision-making (Uhl-Bien, Marion, and McKelvey 2007) consequently dampening creativity and innovation causing tension within this research organisation. Keeping individuals roles and responsibilities separate also creates silos within the organisation discouraging sharing of information thus negatively influencing learning opportunities within the organisation (Andrews and Knowles 2011).

The prospect for creativity and innovation exists at all levels of the organisation with the majority of ideas coming from the lower levels allowing organisations that are culturally innovative to rapidly implement identified innovations (Davenport 2013, Staw 1980). Within this research organisation, many ideas from junior levels were identified. Agents at lower levels are close to the activity and can therefore identify opportunities and areas of improvement by coming up with associations and ideas previously unidentified issues. The importance of contributions individuals make towards the learning process within an organisation has more bearing than the

individual's position within the organisational hierarchy (Nonaka 1991). Facilitating processes that allow presentation and discussion of ideas from across organisational levels would therefore be beneficial for this research organisation as contributions are not hierarchy dependent.

Self-development and employee initiated learning and development initiatives are potentially functional participation (Bolino, Turnley, and Bloodgood 2002) in addition to creative solutions that individuals within this research organisation implement without seeking prior approval as they have recognised a need. Within this research organisation supporting self-development activities and not applying financial constraints of paying back tuition would also be beneficial to the organisation as individuals potentially apply what they learn thereby increasing variety within roles. Enjoying the variety within their roles also allows functional participation to take place with some individuals seen to be available to assist and interact with staff out of hours. A lot of staff development also happens on the job therefore some managers supported individuals who pursued self-development learning activities.

6.2.1.5 Tacit Knowledge

Generally, tacit knowledge refers to the unwritten skills or understanding of various organisational processes that employees possess. It is informal and contained in intangible forms such as proficiency, judgment, awareness, experience, and tricks of the trade. Tacit knowledge is very difficult to codify and transmit with organisations constantly struggling to motivate employees to share knowledge that they have (Spulber 2012; Quinn et al., 2003). Organisations can also only achieve competitive advantage by valuing tacit knowledge resident within it, as explicit knowledge is known by and readily available to others (Sánchez et al 2013).

Tacit knowledge is seen to have a very steep "distance decay" curve, requiring direct experience and interaction (Dicken 2015, 108) making most knowledge within organisations context specific and tacit or originating from tacit knowledge thus difficult to articulate and codify (Kalkan 2008). Separating tacit knowledge from its context therefore results in devaluation and a loss of core meaning (Kakabadse, Kouzmin, and Kakabadse 2001).

Personal commitment and identification with the organisational mission by individuals is the key to accessing tacit knowledge and making it available to the organisation to develop further (Nonaka, 1991). The research organisation and the resources sector experience a high turnover that potentially results in tacit knowledge leakage. Consequently, retaining that knowledge becomes crucial for organisations through staff retention and recognising staff worth and value add to the organisation.

An alternative view to agentic turnover problems states that agentic tenure ultimately impacts performance as individuals tend to become stagnant, comfortable and complacent in the organisational ways of doing things thereby resisting change efforts and opportunities to improve (Staw and Sutton 2000). Within this research organisation, agents either voluntarily or through redundancies looked for other opportunities so long term tenure is not a hindrance at this point.

As an alternative to “bouncing” or removing underperformers through “forced ranking” systems (Grote 2005 31; Ulrich 1998, 18), that analysis suggests this research organisation should try to retain individuals if they have the required skillset and fit for the team by understanding and addressing reasons for under performance. Increase in turnover whether forced or voluntary involves on-boarding costs and training (Hester 2013; Staw 1980). Within this research organisation, in addition to a dollar cost there was a “training liability” to the organisation. Therefore, staff retention should be seen as a means to keep existing knowledge within the organisation.

The “process-methods-systems-tools” approach to codifying and managing knowledge is not suitable to codifying and capitalising on tacit knowledge resident in the organisation (Moitra and Kumar 2007, 150). Within this research organisation and with knowledge being context specific, strategies identified for codifying tacit knowledge included attending conferences and training sessions as a team to enable individuals to participate in these sessions themselves and then share the knowledge from their perspective.

Agents needs to be creative is potentially the result of their want to improve as each interaction occurs with the intention of building relationships that provide

opportunities for improving through learning (Gurteen 1998; Shalley, Gilson, and Blum 2009). Within this research organisation, brainstorming sessions should be encouraged through ongoing interactions amongst agents, as these sessions are an important vehicle for generating creativity (Gurteen 1998; Kohn and Smith 2011). Brainstorming sessions can however be restrictive as creativity is a by-product of playful activity, generated when hierarchies or limits set by management do not restrict agents as within this research organisation where an “end-state” solution is dictated. Attitudes and views within brainstorming sessions also tend to gravitate towards the prevailing attitude within the group (Vallacher and Nowak 1998). Thus, unifying support and convergence for the most dominant view within the group (Abelson 1979, 247; Kalargiros and Manning 2015), potentially identifying non-optimal solutions that are guided by a concern to achieve majority consensus within the group (Kalargiros and Manning 2015; Vallacher and Nowak 1998) is a major challenge for organisations to address.

Organisational psychological and socio-psychological issues (Bies et al 2007) revolve around understanding the team makeup, culture, responsibility, essentialism, and stereotyping. A major enabler or impediment to leadership and interactions amongst agents is organisational culture. Cultural differences and communication styles play a crucial role in managing effectively in multicultural environments (Park, Hwangt, and Harrison 1996). Misinterpretations and ineffective communication resulting from cultural differences also inhibit a collective understanding of problems thus restricting the manner in which these problems are resolved (Moran, Abramson, and Moran 2014).

The assumptions, beliefs, and values shared by individuals within the organisation form its culture making it an essential part of the organisational functioning mechanism (Martins and Terblanche 2003; Sinclair 1993; Smith and Stewart 2011). These cultures are also sometimes identified as “strong” or “thick” and can be differentiated from other cultures by the existence of organisational standards and customs (Sinclair 1993, 66) that are shared by employees at all levels (Ogbonna and Harris 2002; Sinclair 1993) thereby ensuring that organisational agents are not deviating from the norm. Multinational organisations generally tend to operate using aspects of their home organisational culture including in their adopted operating

environments. Within this research organisation, some individuals received higher management positions because of the organisational “setup” meaning the imported organisational culture.

Accountability within organisations is critical as it depicts an image of transparency and trust within the organisation (Bovens 2007). In this respect, within this research organisation, individuals were not accountable for wrong decisions, resulting in repetition of mistakes. This research organisation therefore needs to increase accountability within all management tiers to ensure that management are accountable for decisions with lessons learnt from any adverse decisions made. This will continually assist this research organisation to improve its operations.

The opportunity to take responsibility and ownership of tasks motivates and fosters an environment of trust, reducing the need for a costly monitoring process (Nahapiet and Ghoshal 1998) creating circumstances to generate and nurture creativity and innovation. Within this research organisation, the absence of ownership potentially contributes to an environment of uncertainty.

6.2.1.6 Emergence

Emergence is regarded as complexity theory's anchor point phenomenon (Chiles et al 2004), resulting from agentic interdependence (Schneider and Somers 2006), occurring at lower organisational levels when agents interact and resonate by networking, exchanging information, taking action and adapting to feedback. Agentic interdependency encourages learning by pressuring agents to act on knowledge flowing within the organisation (Schreiber and Carley 2006) consequently, individuals who learn faster than others in the team become a focus for the emerging “basin of attraction” (Kauffman 1993, 393) in the process accumulating expert power and becoming emergent leaders (Panzar et al 2007).

Within this research organisation, generating creative ideas was about continuous improvement through experimentation, with the initial step towards improvement not mattering. As organisational adaptation occurs through experimentation (Heifetz, Grashow, and Linsky 2009), effectively channelling this energy then becomes vital in order to generate creativity, innovation, and adaptive learning (Uhl-Bien and

Marion 2009). Mechanisms are universally available emergent patterns of behaviour that enable a specific dynamic mix of variables and causal chains that explain some event, with attractors being one of six mechanisms that fosters adaptability and creativity (Marion 2008). Within this research organisation, creativity, and innovation were mechanisms to improve through emergence of new ideas and willingness to take action.

6.2.1.7 Process

Due to the innate leaking nature of knowledge, it is necessary to distribute tacit knowledge and skills through the whole organisation via a knowledge codification and transfer process (Leydesdorff, 2002; Nonaka 1994). Codification is the process of saving knowledge that can be used by an organisation for later retrieval and application; aimed at formalising knowledge by capturing it, making it more explicit than tacit, and representing it in an understandable format (Starovic and Marr 2003). Within this research organisation, amongst other methods, codification involved the recording of the way in which a person performs and completes their duties and tasks. This research organisation also maintains various electronic corporate databases that contain detailed transactional data for further analysing the business or its processes thus assisting in developing appropriate competitive strategies.

Internal processes and routines that potentially include tacit organisational rules and procedures, determine workflow as well as sharing of these rules and procedures through the organisation (Starovic and Marr 2003). Knowledge transfer is then a process by which organisations make agents aware of the routines and practices adapted within the organisation (Kalling 2003). The prevailing organisational culture shapes the processes that assist in the creation and adoption of knowledge within the organisation (De Long and Fahey 2000).

Within this research organisation, individuals expected updated information making it the responsibility of each area to ensure that this was creatively done rather than just mechanically. In some instances, codified procedures exist although the work itself was not complex but there was a need to follow a method to ensure consistency of work and process. This can however result in tension between having a rigid standardised manner of performing tasks against the flexibility required to ensure

that individuals are able to think creatively around how tasks are completed. Having a rigid standardised process can result in stagnation due to mechanical completion of tasks.

6.2.1.8 Organisational Resources

The current global environment places intense demands on finite resources thereby making informed economic decisions in complex situations essential for survival (Boschetti et al 2011). This also adds pressure to understanding that adaptation may be necessary to achieve improvement in an environment of demand and scarce resources (Gonnering 2011) as not understanding value creation within the organisation can lead to inefficiencies and wasted resource (Starovic and Marr 2003).

Exchange of tacit knowledge held by individuals is necessary for knowledge development and combination (Nahapiet and Ghoshal 1998). However, “power, recognition, and access” to tacit knowledge can be impacted by the ethnicity of individuals or organisational culture thus creating reward structures that facilitate individual’s retention and competition (Jonasson and Luring 2012, 413). Individuals should instead interact to promote collaborations rather than compete thereby benefitting the organisation as a whole (Boal and Schultz 2007). Within this research organisation, findings highlighted working in a well-functioning team has a synergistic influence that reduces tensions and makes up for short falls of individual team members consequently making the whole organisation more effective. This research organisation needs to promote more teamwork and cross-functional teams in order to capitalise on synergies inherent within the diverse organisational culture.

6.2.1.9 Utilising Resources

Senior management are responsible for the allocation of scarce organisational resources such as personnel and budgets (Hunt, Osborn, and Boal 2009) to ensure effective use. Within this research organisation, undertaking projects by individuals depended on resources provided by the organisation, as within the current economic climate financial resources are scarce. Organisations also manage employees as inventory only employing and allocating resources as needed (Leana and Van Buren III 1999). In this manner, this research organisation employs consultants or short-term contractors based on skills required at the time however, there is a cost for on-

boarding short-term individuals indicating that making a more concerted effort towards a staff retention strategy might be more economical. This research organisation also needs to increase the level of external networking by facilitating and providing more resources to individuals who are keen to pursue such activities, as the benefit to this research organisation is tangible.

Leaders have a responsibility to create time and assist with workload management (MacGillivray 2010) as a means of addressing situations where individuals externalise and blame a heavy workload for the lack of time and opportunity for creative endeavours (Heifetz and Laurie 2001). Within this research organisation, due to increased workloads, there was a lack of time to provide extra information required by stakeholders. However, redistributing and reallocating workloads across available resources allows time for reflection on improving processes. Redistributing and reallocating workloads however becomes easier amongst multi skilled and experienced individuals. Increased workload often causes agents to seek quick solutions to problems rather than take time to reflect and understand the actual causes for the issues encountered (Cressey 2006; Ellström 2006) resulting in a shallow understanding of process as well as learning outcomes (Tucker, Edmondson, and Spear 2002).

Some areas of this research organisation were service providers and they therefore did not have the time to do any formal team building activities. The inability to accrue new knowledge due to instability and being in a state of constant flux results in new improvements being overridden, making it costly to capitalise on being innovators with a “first-mover” advantage (Hunt, Osborn, and Boal 2009, 508). This was evident in this research organisation. Certain areas changed dynamically to meet demands for current information in the expectation that this would allow specific individual needs to get their work done efficiently. Responding in this manner was viewed as enhancing the job security of the service provider staff. However, it also had adverse implications for workload and a deeper understanding of the effectiveness of work processes in service areas. This research organisation needs to facilitate workload management by ensuring that individuals have time to reflect on their work as well as processes in place. This will assist the organisation in being open to innovative ideas.

6.2.1.10 Consult and Engage

Organisations can potentially maximise their operational success when individuals within organisations engage in “peer consulting” where they consult and seek advice from one another thereby having a shared responsibility for issues (Heifetz, Grashow, and Linsky 2009, 153). This proactively allows managers to handle challenges and seek input from all levels within the organisation (Morrison 2011).

Within this research organisation, due to lack of consultation processes, individuals were acting without reference to management even though the decisions made affected all management levels. Greater levels of consulting with agents would be a sensible thing to do in order to be proactive and prevent things from going wrong. It would also increase awareness within the organisation, allowing for informed decision-making that benefits the whole organisation.

Organisational agents on the front line of customer service or production usually carry the most organisational intellectual capital, as they understand a customer’s requirement of the product. However, these agents lack appreciation, with senior management not listening to or taking into account their views (Ulrich 1998). Prior to engaging in knowledge and value creation activities within an organisation, agents must also feel that it is worth their while in contributing to the knowledge pool (Nahapiet and Ghoshal 1998). As was noted within this research organisation, without the support of agents at lower levels it makes it challenging because people within the organisation are the source of knowledge. This research organisation therefore needs to identify ways to engage agents at lower levels thus influencing functional participation.

An agent’s belief system is their ‘basin of attraction and point of stability’. This is where the agent’s behaviours would gravitate to in times of uncertainty and instability. Additional energy from leadership is therefore required to dislodge these belief systems to converge the agent’s point of stability to a new basin of attraction (Lord 2008) allowing a newer pattern of interaction to be created and strengthened (Eiser 1994; Summers, Humphrey, and Ferris 2012).

Within this research organisation, encouraging and engaging agents by providing guidance to assist them in finding solutions for challenges was noted in addition to ensuring that agents functionally participated by taking up training that is provided by the organisation. This assists the agent's career progression and the organisation in retaining knowledge. By encouraging knowledge sharing, agents achieve engagement thus allowing cover for when other agents are away.

6.2.1.11 Taken for Granted

A reward, if it is to be effective in stimulating men, must come soon after the work is done... few men work hard for a reward they are to receive [at some later time] (Taylor 2012, 74).

Expectations based on psychological contracts inherent within relationships between the organisation and its agents are of the beliefs in “paid-for-promises” or “reciprocal obligations” (Robinson and Rousseau 1994, 246; Rousseau 1989, 128). Within this research organisation, a breach in these implied expectations could result from taking agents for granted as well as an expectation that continuous improvement is a requirement of the job but without any recognition or reward. Assuming control over the time of an individual whilst on site can also be a form of directing and taking the individual for granted. Therefore, this research organisation needs to ensure that it maintains boundaries between organisational activities and social activities especially on site. A current debate in the study of FIFO work arrangements within the Western Australian resources sector, amongst 42 other findings agrees and has additionally highlighted accommodation facilities control as a mental health risk factor stating;

Accommodation facilities for FIFO workers are often self-contained, highly regulated, and subject to considerable control measures. It is not clear that all control measures are required for worker health and safety. The Committee questions whether such high levels of control when workers are off shift and in the accommodation facilities are necessary (Education and Health Standing Committee 2015, 94).

Stimulation or motivation that is work engagement may also be impacted by factors external to the organisation such as a change in an individual's personal or social circumstances (Wiley 1997). Work engagement also appears to potentially be a mediating factor between "empowerment" and "innovation" (Bhatnagar 2012, 929), with empowerment seen as a motivational concept (Conger and Kanungo 1988, 474). Further, a gap is seen in current research literature linking innovation in organisations to organisational "attitudes" and "psychological processes" (Bhatnagar 2012, 929).

An issue faced by individuals within organisations is the decision of whether to speak up or stay silent when they have ideas, concerns, or useful information (Morrison 2011). Adding "voice" to issues recognised by individuals is a gap in the current research that potentially needs addressing (Morrison 2011, 405). Within this research organisation, the ability to recognise and fix issues was seen as part of an agent's role without expectation for reward or acknowledgement. Despite this, some agents appreciated receiving acknowledgment for improvements by a simple thank you whereas other individuals expecting something more tangible. This potentially created tension or conflict as some agents wanted tangible recognition for voicing ideas, the lack of which resulted in agents silencing their voice.

Conversely, some agents were potentially taking their roles for granted by not taking the initiative to improve their roles or that agents mechanically executed management direction without questioning if there was a better way of performing the role. Within this research organisation, tension therefore exists as creativity and innovation is part of the job however, some agents saw creativity and innovation to be on top of their normal duties and therefore did not take initiative if not rewarded.

6.2.1.12 Receptive and Supportive

Within this research organisation, the need for leaders to be good communicators, who are able to create conditions for idea generation, was identified as facilitating creativity and innovation. However, sessions to canvas innovative ideas on adaptive challenges were seen as beneficial but it was also noted that management did not always welcome new ideas.

One participant highlighted a well-known management-consulting firm that uses “inter-disciplinary groups” as an example of the advantages of having diversity in views, which assists creativity and innovation. This practice of involving inter disciplinary groups was not however perceived by participants to be characteristic of organisations within the resource sector and unlikely to work within this research organisation as roles on site are generally blue collar and geared narrowly towards resource production. The organisation’s management provide support and resources to complete tasks as well as engage the external mind for tasks that the organisation does not have the required in-house skills. Thus, some conditions are set to foster problem solving and to learn from other experts.

Those who had credibility with management in terms of recognition of ongoing contribution and performance were seen as having some leeway to make occasional errors. Managers also entertained ‘rational’ ideas supported with a good business case by the initiator. However, in a resources sector downturn, as any ad hoc funding generally needs prioritising, supporting ideas with backup is difficult due to limited resources. This again results in tension, as funding to support ideas that could benefit the organisation is scarce.

Within this research organisation, social networking was viewed as different ideology that management did not see as value adding to the business. This combined with the lack of having a dedicated department to investigate, process, publicise, and implement new or innovative ideas was seen as a reason for not having new ideas followed through to implementation.

6.2.1.13 Risk

Self-development occurs when agents recognise the need to further develop and have the control to select the type of development and are willing to undertake the required learning to drive this initiative (Antonacopoulou 2000; Pedler, Burgoyne, and Boydell 2013). Within this research organisation however, agents who took a risk to develop their skillset further when this was not mandatory for their role were seen by only some to deserve support for taking that risk.

Support from management to be able to undertake self-development learning was necessary as management took the risk of losing the agent with all their accumulated tacit knowledge once their training was completed. In boom times, this research organisation assisted agents by sponsoring self-development initiatives and reimbursing fifty percent of the course fees for formal training however, with a catch that locked the agent in remaining with the organisation for up to three years after course completion. In order to encourage self-development, this research organisation might benefit from reinstating support for such initiatives without constraints that dampen such initiatives by agents.

6.2.1.14 Awareness

Having the awareness and understanding to recognise patterns of self-organisation is a fundamental dilemma within organisations. Such awareness is an epistemological dilemma, as it is about the capability for knowing (Richardson and Cilliers 2001) as well as having the ability to notice unexpected patterns of behaviour (Buckle-Hennings and Dugan 2007).

Within this research organisation, management's awareness of their staff as well as general organisational and industry awareness was noted as important with managers ensuring they do not upset or inadvertently set their staff up for failure. Individuals should also be able to recognise where things are not working and take the initiative to be more creative and innovative. As discussed in Section 6.2.1.1, within this research organisation, due to cultural diversity as well as tension between eastern and western management ideologies, being aware of not upsetting people becomes an ongoing challenge for management. Self-awareness as well as awareness of the local and external environment was highlighted. In some cases, individuals recognised the need for confidentiality. However, an awareness of issues across the organisation as well as an individual's personal issues was highlighted with this seen as challenging as such issues can affect or be affected by others from within the organisation.

In addition to ensuring that the organisation maintains statutory and regulatory occupational health and safety standards, being aware of the importance of a safe work environment is fundamental for the effectiveness of the organisation (DeMeritt 2005). This is critical for this research organisation, as it needs to be aware of and

ensure it treats individuals with care and respect. As was noted within this research organisation, treating people inappropriately, reprimanding them in public, and then expecting them to be truthful about what is going, was seen as a lack of respect and awareness for the individuals resulting in individuals withholding information.

6.2.1.15 Empowerment

Empowering agents to take on more challenges and at the same time become multi skilled provides people with different perspectives and the ability to analyse issues. However, by being too prescriptive people do not get ownership of challenges that they are addressing. Within this research organisation, individuals need more authority and responsibility to be creative and find better ways of completing tasks on hand. Being aware of innovation happening within the industry, was also a means to assist the organisation in analysing and understanding solutions found and implemented by others to challenges that the organisation is currently facing. Solving issues was seen to be possible by initially identifying the problem and then being confident to discuss solutions that the organisation can implement.

Creativity can be a vision driven process guided by thoughts of management and goals the organisation is trying to realize (Gurteen 1998; West and Sacramento 2012). Stating the goal and allowing this directive to guide agents in solving adaptive challenges also potentially achieves creativity. Within this research organisation, giving people flexibility but advising and consulting management on potential solutions so that there are no objections in implementing solutions could also foster creativity. Additionally, letting people know what the goal is, but giving them ownership of the process so they do not just repeat past mistakes is a means to improve processes.

6.2.1.16 Respect

Open and honest conversations are crucial within a complex system environment as both a critical source as well as a conduit for the energy that keeps the system functioning potentially bringing distributed intelligence into play (Plowman and Duchon 2007). Within this research organisation, showing respect and integrity towards agents is crucial to building relationships. Treating agents and existing

relationships within the department with respect promotes interactions that lead to honest and open conversations.

Creativity is required at all levels within an organisational structure and is the responsibility of each agent within an organisation (Gurteen 1998; Shalley, Gilson, and Blum 2009). Creativity results from the action of identifying ways to modify current tasks or creating new ways of undertaking these organisational tasks whilst innovation is a result of implementing these new ways of thinking or working (Gurteen 1998; Tierney and Lanford 2015). Amabile (1983) further explains,

A product or response will be judged as creative to the extent that (a) it is both a novel and appropriate, useful, correct, or valuable response to the task at hand and (b) the task is heuristic rather than algorithmic (Amabile 1983, 360).

Within this research organisation, regardless of their origin from within the hierarchy, all ideas were seen by participants to need consideration for their value to the organisation. Thus showing respect for individuals generating and presenting creative or innovative ideas. However, this research organisation has a hierarchical structure that hinders creativity. This creates tension between the need to consider ideas from across all levels against a structure that potentially discounts these ideas. A “Novel” idea or product results from already existing resources that contain some new elements and it is something that did not exist in exactly that same form previously (Stein 1953, 311). Innovation as part of a continuous improvement process within this research organisation was seen as an extension of something that had already started earlier with creativity or innovation being mechanisms for improvement. As a result, innovation within this research organisation is more likely to be novel.

Walker (2015, 1-2) describes;

At the heart of our global innovation engine are groups of gifted and talented men and women who are committed to challenging the status quo

to say we can do things better and act on this belief...innovation is people inspired!

Within this research organisation, creativity resulted from people who encouraged and inspired other individuals to think independently and be creative as working within teams to foster creativity was about “working smarter and not harder.” However, getting buy-in for solutions from management was as an issue within this research organisation. Most innovation within organisations is an incremental process therefore not major or far reaching (Audretsch, Martínez-Fuentes, and Pardo-del-Val 2011). The organisation’s application of continuous improvement processes was seen to make individuals more creative, effective, and efficient. Continuous improvement is a process that aims to

...achieve ongoing incremental performance enhancements through a gradual never-ending change process, focused on increasing the effectiveness and/or efficiency of an organization to fulfil its objectives (Audretsch, Martínez-Fuentes, and Pardo-del-Val 2011, 1922).

Participants noted the need for motivated staff and other factors that determine motivation. This includes having the right people for the job and those who thrive on continuous improvement in a context where creativity and innovation are expected but not rewarded. However, it was also noted that due to cultural or operational issues, parts of the organisation were not working together and some individuals were seen to attempt to correct issues without going through a due diligence process or getting the necessary approvals. This potentially results in sub optimal solutions being implemented.

Innovation is a key driver for organisational success (Jiménez-Jiménez and Sanz-Valle 2011), with creativity and innovation noted as critical for the organisation. Thus, allowing teams within this research organisation to become dormant and demotivated through lack of respect from upper management could result in them leaving the organisation resulting in leakage of accumulated corporate intelligence or staying within the organisation but not contributing to continuous improvement or change initiatives.

A reflexive team is more productive and innovative (Schippers, West, and Dawson 2015) with reflexivity amongst individuals promoting an awareness of organisational objectives, its strategies, and the environment bringing alignment towards challenges for innovation (Schippers, West, and Dawson 2015). However, the data analysis suggests that there was scope for greater reflexivity on the part of some managers, particularly in the area of showing respect for those who initiated productive changes. It appeared that creativity in certain areas is constrained or dampened by managers who took credit for other people's efforts.

An individual's "intolerance for ambiguity" due to strategic gaps (Stein 1953, 312) or lack of respect from upper management can explain the stifling of functional participation as this is the inability of an individual to exist and persist in creative endeavours. Within this research organisation, the lack of vision from senior management or their inability to communicate this vision was stifling employee functional participation.

Appreciating, recognising and displaying respect for employee effort by rewards generally motivates, promoting and driving creativity and innovation as economic payback generally results in increased commitment to organisational goals (Caroline Martins and Meyer 2012; Shalley, Gilson, and Blum 2009; Ulrich, 1998). Within this research organisation however, creativity and innovation is a by-product of normal day-to-day operations and seen to be part of an agent's job with the lack of necessary reward or recognition. As a means to motivate people to be creative and innovative, this research organisation needs to implement a formal reward, recognition or bonus structure linked to performance potentially with a spot bonus system. However, a rewards structure within this research organisation needs careful designing. Findings highlighted that rewards ranged from retaining a job to simple acknowledgement of a job well done.

6.2.1.17 Fear

Effective creativity and innovation can be stifled by fear that manifests in different ways such as fear of failing (Shinnar, Giacomini, and Janssen 2012; Gurteen 1998), fear of questioning assumptions and performance, fear of empowerment, or fear of decision-making (McGrath 2014). These fears are more pronounced in high power

distance cultures where agents expect direction (Hatch and Cunliffe 2013) and in eastern cultures where the fear of face loss is applied more rigidly thus adversely affecting initiative (Jonasson and Luring 2012). This research organisation experienced enormous challenges establishing an operation in Australia with these challenges compounding into budget overruns creating a culture of fear and of face loss. Ireland and Hitt state that:

“The realities of competition in the global economy demand a corporate focus on growth rather than on downsizing and cost reductions (1999, 53).”

However, the focus in this research organisation was on size and cost reduction, which created a climate of fear that resulted in a dampening of innovation and creativity.

6.2.1.18 Innovation

The essence of innovation is to re-create the world according to a particular vision or ideal (Nonaka 1991, 97).

Product innovation is either radical thereby totally transforming a product (Dewar and Dutton 1986; Norman and Verganti 2014; Slater, Mohr and Sengupta 2014) or it modifies and refines the product through a process of continuous improvement making it incremental innovation (Ettlie 1983; Norman and Verganti 2014). Within this research organisation, some individuals noted a lack of resources to assist in continuous improvement. In addition to financial constraints, the lack of a dedicated team to analyse ideas hindered innovative activity with many initiatives not explored. Individuals also noted openly discussing initiatives and working as a team as a positive way to discuss ideas for innovation, facilitating knowledge sharing, encouraging individuals to give their thoughts within forums thus fostering innovation. Devoting specific resources to learning and training processes is one of the most effective methods of internally creating knowledge within an organisation thereby encouraging employees to be creative and keen to learn (Starovic and Marr 2003). Individuals noted that negativity could easily set in from the lack of organisational resources despite recognising there was a need to work more efficiently and effectively.

Learning can be a result of employee self-development or of a training regime instituted by the organisation. Investments in training and development are associated with a range of individual and organisational benefits whereby the ongoing development of the skills of an employee underpins broader business objectives (Stuart and Santos 2003). Investment in training at an individual level also constitutes a powerful signalling device that reassures employees that employers value their contribution to the organisation consequently increasing employee motivation and commitment to organisational objectives (Keep 1989). Agents also need to be encouraged to share their training and learning within the organisation as individual learning results in organisational knowledge (Pemberton and Stonehouse, 2000) with the ability to learn faster than ones competitors may be the only sustainable competitive advantage (Rowley, 2000) for the organisation. Within this research organisation, individuals noted facilitating the right opportunities for agents to learn about the types of innovation taking place, was potentially achieved by attending workshops and through understanding the capability of staff and providing them with suitable challenges.

It was also noted that within the resource sector innovation usually only takes place when an organisation starts running into resource limitations. Prior to that, there is no need to innovate. Thus, opportunity for innovation is limited with innovation restricted to continuous improvement.

Not a lot of people are going to be doing innovation, because they don't need to... The guys don't even have to get up and look out their window and they already have \$4 billion of work going on in the area. So, why innovate (DeStefano quoted in Canadian International Council, 2014, 26)?

Within this research organisation, this again points to tension, as there is no need to innovate during boom times and it is seen as being potentially too risky to innovate during down times.

6.3 Interactions

The single research objective discussed under this heading is to:

3. Gain insights into how system level self-organisation emerges from informal agentic interaction.

Data analysis revealed that there were elements of adaptive leadership present. However, these elements again align closely with a cybernetic leadership focus suggesting a leadership continuum within the organisation from cybernetic to adaptive leadership.

As noted earlier, interactions are a way of encouraging conversations around topics of mutual interest that in turn generate rapport, and trust amongst the interacting agents. Within this research organisation, individuals interact through different mediums such as face-to-face, email, instant messenger, socialising at company-organised events, or events organised privately amongst the individuals.

The structural context of interacting agents partly determines interactions amongst agents within organisations (Pfeffer 1985). Interactions accelerate knowledge flow within the organisation (Schreiber and Carley 2006), with conversations seen as a critical source and medium through which the energy that keeps the system and organisation functioning is generated and transmitted (Plowman and Duchon 2007). Social interactions are also flowing in nature and therefore susceptible to changes that result from tension affecting where and how knowledge generates and accumulates, consequently impacting learning and adaptation within the organisation (Schreiber and Carley 2006). A key characteristic of complex behaviour is predictable or even unpredictable change where unexpected behavioural or structural change can result in “self-organisation” (Uhl-Bien and Marion 2009, 632).

Within this research organisation, interacting with stakeholders was seen mainly as the responsibility of agents accountable for stakeholder management. They were closer to the interaction and better able to maintain those relationships. Managers were responsible for interacting at higher levels. Interactions from higher levels down to lower levels in some cases were seen as an issue with management withholding information and not interacting with lower management levels. This research organisation can increase interactions by being more open with information

freely flowing vertically and horizontally. Withholding of information across departments was also noted resulting in inefficiencies.

Interactions between agents portray characteristics referred to as attractors that are generally fluid, and continuously in flux between shared leadership, being formal, or emergent (Panzar et al 2007). In complex and dynamic environments, interactions result in a continually evolving social structure that determines how future associations emerge thus allowing system adaptation, and survival (Schwandt 2008). Influence resulting from interactions and interdependent behaviour generates change amongst interactors within the organisation as outcomes resulting from these behaviours feedback onto one another in a complex manner whereby the effects of change become causes of change through extended chains of effect (Uhl-Bien and Marion 2009). Overtime, agents tend to converge towards a consensus or similar thinking thus requiring an injection of fresh thinking and points of view (Janis 1972) gathered through interacting with the external mind (Panzar et al 2007). Within this research organisation, knowledge acquired through regular use of contractors and consultants thus interacting with the external mind resulted in filling skills gaps within the organisation. To identify and recruit staff with the right skills, the external mind was also regularly tapped into and utilised without advertising for vacancies.

Established in 2005, the organisation is young. However, most of the original-founding employees have now moved on. Those who have been longer term have existing established networks and relationships that tend to consume more of their interaction energy thus leaving new entrants to create their own networks (Pfeffer 1985). Thus, assimilation of new agents within this research organisation can therefore occur through social interactions facilitated by the organisation or initiated by new entrants who can see common interests with others. Personally initiated interactions to build networks to understand the organisational culture, policies, procedures, and production processes can however result in significant loss of interaction energy.

The research organisation has some visible established networks and relationships stemming from one of the two main cultures that interact and communicate within their own social group generally to the exclusion of the other dominant Australian

culture. In the process of interacting therefore, social groups are seen to exist within the organisation that enable agents from one dominant culture to build on and recreate meaning and structures that are culturally familiar to them and in the process facilitating the creation of cultural silos and homophily. Homophily is described as the disposition of agents to connect with others who are like them (Wanberg et al 2014), results in limiting opportunities for knowledge sharing within this research organisation.

Daily conversations within the organisation revolve around business as well as social topics, which builds rapport and trust which are important foundations for knowledge sharing. Non-work related conversations or private interactions in the workplace also take place when agents are interested in growing personal friendships or if their chances of success within the organisation are enhanced (Lin and Kwantes 2015). Within this research organisation, management need to increase interactions and socialisation by creating or facilitating opportunities for individuals to interact as a unified organisation culture. This will result in benefits associated with tightness amongst connections (Plowman and Duchon 2007). Tightness amongst connections makes the dissipation of energy in the form of information, ideas, or gossip easier. Tightness will also push the system quicker towards instability thus facilitating opportunities to bring new order to the system (Plowman and Duchon 2007) potentially giving rise to creative adaptation and innovation (Anderson 1999; Runco 2014).

Managed socialisation is the need to assess social interactions through a managed process and to develop this as an essential element to understand and complete the missing link to knowledge management within the organisation (Moitra and Kumar 2007). The organisation encourages social interactions by providing company sponsored gym memberships as well as invitations to join an employee run social club that organises different social activities for employees to participate and engage in. Interactions and socialisation were also seen to assist in providing a deeper understanding into behaviours and styles of working. At the same time however, there was recognition that such opportunities need to be voluntary and that forced interaction does not necessarily foster meaningful engagements and interactions.

6.3.1.1 Relational Capital

These are the resources linked to the external relationships of the firm with suppliers, partners, consultants, contractors, or customers (Starovic and Marr 2003). Relational capital also refers to customer loyalty that can be loyalty from and to both internal and external customers. Loyalty is seen as the act of agents to put aside their personal interests in order to benefit, promote, and defend the organisation (Bolino, Turnley, and Bloodgood 2002). Intellectual capital results from an agent's competence and commitment thereby stemming knowledge leakage (Caroline Martins and Meyer 2012; Ulrich 1998). A myriad of complex interactions generally also influence relationships amongst agents and the external mind (Uhl-Bien and Marion 2009). An emergent leader uses such relationships within the organisation to increase capability, by fostering relationships, increasing interaction, and connections.

Within this research organisation, loyalty amongst internal customers resulted from positive interactions amongst the interacting agents as part of an organisational responsibility or alternatively, as individuals building rapport with other individuals. Individuals who demonstrate loyalty towards their peers and colleagues are also seen to be congenial as well as trustworthy (Bolino, Turnley, and Bloodgood 2002).

6.3.1.2 Thin Communication

Non-professional speakers of English are partially restricted to a smaller range of vocabulary that facilitates professional exchanges but limits talk and social exchanges (Bjørge 2014; Park, Hwangt, and Harrison 1996). These speakers often fear that their lack of language skills may reflect negatively on how others perceive their professional knowledge and skills (Bjørge and Whittaker 2014; Park, Hwangt, and Harrison 1996). Interpretation can possibly result in the loss of meaning depending on the context of interpretation (Nonaka 1991). Within a multi-cultural organisational context, as with this research organisation, knowledge interpreted by a non-native English speaker may possibly be different to how a native English speaker interprets such knowledge resulting in a recurrent alteration of meaning as knowledge is dispersed within the organisation (Nonaka 1991).

Emergent leaders use language and consider wider organisational views in order to understand the direction of the organisation by achieving better clarity when agents

convey the same message (Plowman and Duchon 2007). In this research organisation, this becomes difficult with the prevalence of multiple languages and communication mediums. However, this research organisation can instil the importance of having communication conducted in English as a shared language understood by the organisation as a whole. The prevalence and reluctance of non-English speakers to converse, communicate, write, or provide feedback in English were also noted as causing frustration and annoyance amongst the English speakers as they could not read or understand the non-English communication without translation and the resulting characteristic lost in translation issues.

English speakers also found the non-English communication disrespectful and did not understand why it was being widely practiced in a predominantly western organisation. They were however resigned to it and rationalised it as an accepted practice in various areas of the organisation. Presumably, within this research organisation, non-English speakers experience the same frustrations with communications in English, thus creating a constant tension between the two groups with communicating in a familiar language and creating meaning from a non-familiar language. Further research relating to communication problems between locals and western expatriates in multinational organisations needs addressing (Jonasson and Lauring 2012).

6.3.1.3 Networks

Within this research organisation, engaging with the external mind was critical as it allowed the organisation to tap into knowledge and skills that it currently did not possess internally. The organisation used contractors and consultants on a regular basis as they have the specialised skills required at that particular point in time. The organisation also relied on and continued to utilise reliable consultants on an ongoing basis as they were seen to have acquired the specialised knowledge necessary for this research organisation's needs. Organisations can also "borrow" knowledge through interacting with the external mind such as consultants who bring in their own knowledge, tools, expertise and networks that can supplement or replace competence that the organisation possesses (Skilton, Wiseman, and Glick 2011, 183; Ulrich 1998, 17). Within this research organisation, working with consultants assisted in building ongoing relationships between organisational agents and the external mind.

Leadership within this research organisation can assist with fostering networks between agents by facilitating recreational scenarios and generally allowing agents to interact freely during work times. Providing a platform to facilitate social interactions assists agents in building relationships with others at a personal level that allows these interactions to integrate in work interactions thus extending networks throughout the organisation.

However, individuals highlighted that the organisation facilitating such interactions can potentially be a way of controlling and an invasion of privacy by the organisation especially when the agents are site based and on a fly-in, fly-out (FIFO) rostered pattern. Being on site hinders team-based interactions as not everyone can attend at the same time, as it negatively affects departmental productivity. This research organisation can facilitate increased socialisation by scheduling more interactions to happen consecutively around roster changeovers thereby allowing each individual to take part, for example, Christmas functions on site.

Within this research organisation, workplace relationships of site based agents spilled over into their personal space with some agents keeping in touch and interacting over their rostered breaks. This was due to existing rapport and relationships, with agents only being able to see each other on changeover days. Some agents also kept in touch with colleagues who have left the organisation thus engaging with the external mind. Interactions and relationships are however more about like-minded people who enjoy each other's company and want to take the interactions outside of the workplace (Asah and Blahna 2012). For this research organisation, a tension and challenge exists in finding the balance between creating an environment for relationships to develop and flourish ensuring that the organisation does not impinge on an agent's free time

6.3.1.4 Generative Relationships

Leadership seeks out, fosters, and sustains generative and higher quality relationships amongst agents in organisations (Carmeli, Brueller, and Dutton 2009; Lane and Maxfield 1996) that are suitable where outcomes are uncertain. The dynamic underlying emergent change inherent in generative leadership is seen as adaptive leadership (Uhl-Bien, Marion, and McKelvey 2007). Being outcome and solution

focused (Linderman, Pesut and Disch. 2015), generative leaders emphasise the efficient allocation of resources across multiple systems.

By retaining and reusing ideas generated from interactions, generative leaders facilitate the flow and speed of interactions within the organisation, in the process increasing the amount of information available for creativity to flourish (Surie and Hazy 2006). To increase the pool of idea generation within this research organisation, retaining and reusing of ideas took place through idea sharing and brainstorming sessions. This research organisation however needs to put in place a process or dedicated department that collates analyses and implements ideas generated from such interactions if it wants to increase innovation and creativity.

Generative relationships amongst agents are also a means by which new meaning and characteristics arise through common interests, willingness to change as well as organisational structures that determine communication protocols (Anzoise and Sardo 2015). Within this research organisation, generative relationships assist in building mutual admiration thus improving the quality of interactions with other stakeholders, allowing open and respectful conversations to take place.

As the requirements of organisational agents are not homogenous, their goals, behaviours, and actions are likely to be in conflict (Rouse 2008). However individuals are seen to share certain basic needs (Burrell and Gareth Morgan 1979) that become clear with the emergence of self-organised groups, as such groups permit covert drives, emotions and desires to potentially be expressed and fulfilled (Denhardt 1981). Within this research organisation, applying the eastern philosophy of “bingcun hubu” or complementary coexistence (Rudolph 2008, 128) can assist in managing the different cultures thus alleviating situations where harmful conflicts could potentially arise. Bingcun hubu can be a bridge between the two dominant cultures by integrating and bringing them together and allowing the organisation to capitalise on the synergies generated. This development of strong relationships would potentially result in improved communication ultimately assisting in creating innovative opportunities. However, the impact of ethno-cultural diversity on creating innovative opportunities noted in this research has also been identified as a potential shortcoming in current research that requires addressing (Stahl et al 2010).

6.3.1.5 Team

Complexity leadership recognises the benefits of flexibility of team composition that is determined by interactions taking place through independent entry and exit of agents with team composition being uncontrolled by the organisational leaders (Marion and Uhl-Bien 2001). Within this research organisation however, individuals' highlighted benefits of well-functioning teams that operate outside of complexity leadership preferred patterns. This is in line with how work is regulated in FIFO environments where little discretion is available to most workers.

Achieving common organisational goals with resident diverse knowledge and skills is possible by splitting agentic roles between sharing knowledge and providing energy for knowledge dissipation within the organisation (Cooke, Kiekel, and Helm 2001; Staw 1980). Within this research organisation, it was noted, that a team that functions well provides better efficiencies, productivity returns as individual strengths are complimented, and weaknesses negated through interactions thus enabling team members to build stronger personal relationships.

Findings also indicate that rather than multiskilling used to foster creativity and innovation within the organisation, this strategy was undertaken specifically and deliberately as a knowledge sharing activity. This was particularly salient to the organisation as operational roles and roles affecting production are critical to the continuity and functioning of the organisation therefore having multi-skilled staff could potentially assist in reducing costs such as recruitment and training (Henao, Muñoz, and Ferrer 2015; Staw 1980). Organisations should create opportunities between different departments for "cross-pollination" of ideas that inevitably lead to an increase in social capital and knowledge transfer (Jones 2010, 227). Facilitating staff movement at the department and organisation level within this research organisation increased interactions amongst agents as well as sharing of knowledge leading to cross-pollination as well as a better understanding of operations.

Organisations can also be classed as either "low care" or "high care" (Nonaka and Nishiguchi 2000, 5). In a low care organisation, knowledge is predominantly explicit and shared on a transaction basis as organisations limit social interaction thereby limiting the sharing of tacit knowledge. In high care organisations by contrast, social

interaction is encouraged, facilitating the sharing of tacit knowledge through a process described as “indwelling” (Nonaka and Nishiguchi 2000, 5). Relationships within high care organisations are more valued with a greater degree of care amongst individuals making individuals highly accessible, more lenient with a greater inclination to help each other (Nonaka and Nishiguchi 2000, 38).

This research organisation could be categorised as a low-care organisation as it is highly reliant on documented standard operating policies and procedures with only willing individuals interacting. Multi-national corporations such as this research organisation often also suffer from increased administration and standardisation that decreases initiative and increases rigidity (Brunold and Durst 2012).

Knowledge sharing and retention through job rotation programs and fostering a more informed network allowed agents to learn and understand other roles within the organisation. The motivation was to encourage employee development and ensure there is adequate, leave cover within the organisation. Job rotation is seen as a risky proposition as the existence of tacit knowledge between incumbents can potentially result in knowledge leakage (Brunold and Durst 2012). Within multi-national corporations such as this research organisation, job rotation however increases interactions between staff from diverse cultures and backgrounds (Brunold and Durst 2012). On balance, a job rotation program could be beneficial to the research organisation, as it will increase interactions amongst the two different cultures. This program should however be carefully implemented in order to ensure that individuals are able to contribute to and able to learn from others.

6.3.1.6 Tenure

Agentic turnover is the result of a lack of mutual integration as well as conflicts and disagreements amongst managers and peers. This includes agents who do not keep up with up-skilling or are reluctant to upgrade their competence and skills to the levels that their positions now require resulting in an increase in agentic turnover. Turnover has an inverse relationship to tenure as an increase in tenure potentially results in reduced turnover (Pfeffer 1985). Increased tenure initially results in increased skill and performance ultimately peaking and then declining resulting in diminished creativity, motivation (Staw 1980) and innovation. Although

knowledgeable, long tenured employees may be sceptical and conditioned to responding slowly to challenges through learned helplessness (Staw 1980). Redundancies and managing out non-performing agents from the organisation also affects agentic tenure (Grote 2005). Because this research organisation is young, many of the challenges of stagnation and cynicism are not present. However, the volatility of the sector means that most have experienced redundancy either directly or indirectly.

6.3.1.7 Essentialism

Organisational culture is seen to have three important key elements that is, culture is acquired, distributed and communicated (Parsons 1951). Culture, is a result of and a cause of social interaction. Generalising from characteristics of situations is also integral to understating expectations or “normative” (Parsons 1951, 385) beliefs assisting in the judging interests and actions of individuals. Normative beliefs are fundamentally linked to culture (Breunlin, Pinsof, and Russell 2011; Rousseau 1990) and held by individuals in relation to expectations that other individuals within the organisation have of them (Fishbein and Ajzen, 1975; Knudson-Martin and Mahoney 2009).

Essentialism is the tendency to assign a fixed or static quality to cultural differences of an entire group to which the individual belongs (Parsons 1951; Jonasson and Lauring 2012). Essentialism also known as “reification” (Kaya 2005, 144) overstates the significance of certain features of the group thereby misrepresenting the perception of the whole group by individuals outside the group (Wilson 2001).

Agentic interaction, negotiation, and sensemaking of experiences socially create reality within an organisation (Hatch and Cunliffe 2006; Nicholson 1995). Reality and therefore culture is constructed through interactions whereby the environment is dependent on the organisation that is then socially constructed and undergoes constant deconstruction and reconstruction as individuals create reality and meaning from available information. Within this research organisation, different cultural backgrounds of directors were essentialised. Interacting socially was seen as a western ideology but was seen as an unnecessary distraction from an eastern perspective within this research organisation.

Tenure within the organisation potentially reduces conflict by decreasing the degree to which cultural diversity negatively influences performance (Stahl et al 2010). However, essentialism within this research organisation could lead to conflicts through the stereotyping of the two different cultures, making it crucial for cultural integration and effective communication to evolve the business through cultural synergies.

Adaptive challenges are organisational problems that do not have technical solutions, but instead the solution lies in people. These solutions alter the values, belief, assumptions, and behaviours of people and their work (Heifetz and Linsky 2004). As was noted within this research organisation, numerous challenges it currently faces are a result of different cultural, communication and management styles that conflict with Western styles. Therefore, understanding how individual departments and teams work, bringing consistency to information supplied and being flexible to dynamic change are potential ways to reduce some of these challenges. Lack of transparency and communication from upper management also affect decision-making at upper and lower levels within this research organisation.

6.3.1.8 Attractors

Attractor dynamics are highly relevant to personal and interpersonal processes. Beyond capturing basic intuition underlying many social psychological phenomenon, framing such phenomenon in terms of attractors may allow for a significant simplification in the description of a systems dynamics (Vallacher and Nowak 1998, Chap. 2).

People's thoughts, attitudes, and behaviours tend to converge towards relatively narrow sets of patterns or states known as attractors that they tend to maintain and return to relatively quickly despite external destabilizing forces (Vallacher and Nowak 1998). Compared to gravitational fields, attractors pull behaviours towards them. Four different types of attractors: strange, oscillating, quasi, and fixed-point have been identified. Strange attractors are non-repeating attractors that are predictable and stable in the short term but unpredictable and unstable in the longer term (Hunt et al, 2009) resulting from "nonlinearity and interactivity" (Boal and

Schultz 2007, 413). Oscillating attractors are attractors that fluctuate between stability and instability (Cîndea 2006). Quasi-attractors are attractors that are unstable in nature (Kanamaru, Fujii, and Aihara 2013). Fixed-point attractors are associated with rigidity and stability (Dubinskas 1994; Losada and Heaphy 2004; Warren-Adamson and Stroud 2013) within organisations and are more commonly associated with low-performing teams due to poor dynamics within the team (Losada and Heaphy 2004).

The initial beliefs or state that an attractor possesses constitutes its “basin of attraction” with reversible changes to the state corresponding to shifts between attractors whereas non-reversible changes corresponding to structural changes in the attractors (Vallacher and Nowak 1998, 59). Basin of attraction for organisational agents relates to the cultural, social, professional, and personal belief systems that they hold and which the agents tend to equilibrate to for stability or fall back on in times of uncertainty (Lord 2008). Within this research organisation, two concurrent national and organisational cultures exist. It was noted that individuals frequently sought stability of understanding by falling back onto a familiar language or ways of doing things.

The existence of latent positive attractors within an organisation also determine the state a system will gravitate to where these attractors can swiftly dislodge situations of conflict when the basin of attraction is wide allowing the system to return to equilibrium or converge towards a new basin of attraction (Vallacher and Nowak 1998). Within this research organisation, it was noted that some individuals identified tangible rewards with motivation to be creative or voice opportunities for improvement. The lack of tangible rewards resulted in individuals not actively engaging in creativity. Tangible rewards can therefore be seen as a form of an oscillating-attractor, with the existence of reward bringing stability and potentially fostering creativity.

Fixed-point attractors are also the simplest types of attractors leading to a stable desired “end state” (Haigh 2001, 464). As was noted within this research organisation, letting people know what the end state is but then giving them

accountability and freedom to attain such end state allows agents the flexibility of finding optimum solutions.

6.3.1.9 Structure

Organisational structures can be different however, as with this research organisation; most start-up organisations use the prevalent best practice within their sector as their model. This can help them to understand how they should operate as well as the risks and opportunities that they will encounter. Start-up organisations have promising ideas, are agile, risk takers and have a vision of growth for the organisation and due to this initial setup; start-up organisations can be innovative as their structure is not yet fully set (Weiblen and Chesbrough 2015). Within this research organisation, it was noted that innovation might be possible at the design or feasibility stage (Stage A: Figure 2.2). However, if this opportunity is missed, the organisation is effectively locked into a design methodology until the whole project is commissioned. Findings suggest that this research organisation requires a better structure in terms of roles and responsibilities as well as more communication within the organisation. Silos were noted, as was an absence of teamwork. To facilitate interactions and discussion across the hierarchy thereby increasing opportunities to foster creativity and innovation, this research organisation needs to implement a structure with less hierarchical levels as well as identify strategies to break down the silo culture.

6.3.1.10 Leadership Enablers

Leadership is crucial to the manner in which knowledge creation, sharing, and retention within an organisation takes place. It also generates and sets the direction for energy (Lloyd and Stewart 2002). Enabling leadership thus provides structure, facilitating conditions that allow creativity, problem solving, learning, and adaptability within organisations (Uhl-Bien, Marion, and McKelvey 2007). Enabling leadership also facilitates functioning at a complex formal organisational level enacting adaptive leadership within the informal network by injecting tension that stimulates interactions and generates interdependencies amongst the organisational agents (Schreiber and Carley 2006).

Within this research organisation, some of the attributes that individuals believe leaders' should possess to facilitate structure and enable conditions allowing for creativity and innovation to flourish were noted as aligning with an enabling leadership approach.

6.3.1.11 Communication

Leaders need to communicate confidently that they are capable of handling any obstacles that the organisation may face as well as develop their own confidence in order to instil confidence within other individuals in the organisation (Heifetz and Laurie 2001). Within this research organisation, it was noted that a good leader has an aura of confidence, strength, authority, good listening skills, broad experience, effective leadership, and being authentic thereby inspiring followers. These qualities also aid individuals to communicate effortlessly as they have the necessary knowledge and understanding.

Communication is the primary means of regenerating structure that requires the combination of information, utterance, and understanding that is independent from the system itself (Geyer, and Van Der Zouwen 1986) resulting in "autopoiesis" (Maturana and Varela 1980, xxvi). Autopoiesis is how individuals experience themselves as autonomous beings at the same time contributing to the identity and experiences of others within the environment (Maturana and Varela 1980). A clear communication policy with communication mainly in English or any non-English communication accompanied with a clearly translated English version will also assist in alleviating most communication frustration within this research organisation. Conveying the importance of speaking in English also allows everyone to understand the message being communicated thus assisting in fostering innovation.

6.3.1.12 Openness

Openness in the organisation is critical as it creates cultural change as well as inspires individuals to share and codify tacit knowledge throughout the organisation (Lamers 2013). Being open with individuals and communicating what is going on as well as the importance of addressing challenges within this research organisation could potentially foster functional participation and allow individuals to appreciate how each team is affected.

Workload demands can sometimes be too high requiring employees to be focused on critical activities thus inhibiting creative efforts. However, ensuring that employee focus is towards an overarching organisational theme or vision (Ulrich 1998; Yeh-Yun Lin and Liu 2012) is beneficial. Within this research organisation, openness was seen to allow issues to be analysed creatively rather than mechanically thus fostering creativity and innovation.

Conversely, individuals may communicate regularly but still withhold information or ideas about an organisation's challenges that they are aware of but believe that management may not receive the idea favourably (Detert and Edmondson 2011). Within this research organisation, this has resulted in both knowledge hoarding and fear of expressing potentially contrary views. Individuals also noted that creativity and innovation could be nurtured when agents are clearly aware of expectations from them. Individuals hold certain beliefs that encourage silence thereby actively suppressing their views within organisations (Detert and Edmondson 2011). These beliefs frequently confront employees with dilemmas on "voicing" concerns or expressing creative thoughts (Morrison 2011). Management should continuously work to dispel these beliefs by encouraging and rewarding speaking up thus fostering the type of openness that is associated with conditions that facilitate creativity and innovation.

6.3.1.13 Encouragement

An unrestricted culture of continuous learning characterised by honesty, openness, feedback and an innovative culture should be encouraged within organisations (Csath 2012). However, individuals highlighted contrasting views around encouragement within this research organisation. Some managers' actively encouraged innovative activities whereas others noted that innovation was not "discouraged" but it was not encouraged and that there was nothing apparent within the organisational structure that actively encouraged innovation.

Within this research organisation, formally setting performance measures for agents to learn aspects of different areas of the organisation potentially encourages agents to participate functionally facilitating the creation of social capital. This results in and

contributes to the creation of structural capital within the organisation (Bolino, Turnley, and Bloodgood 2002).

A supportive “social/emotional space” is a critical component of increased engagement within the organisation (Teerikangas and Välikangas 2012, 80). Within this research organisation, encouraging agents by delegating problems and allowing the right people to work on them facilitated new solutions thus fostering learning and creativity. Identifying agents with potential was noted thereby providing or creating challenging opportunities for these individuals, encouraging them to perform at a higher level. However rather than “force” an engagement culture, managers should instead understand how to “invite” and enable such conditions (Teerikangas and Välikangas 2012, 87). This was a particularly rich area of data within this research organisation with several examples of discouragement provided including the removal of a department that was practical and symbolic in its role of recognising and rewarding innovation.

Conversely, within this research organisation it was noted that creativity and innovation depended on individuals who were naturally high performers regardless of the level of encouragement with the onus for presenting innovation and ideas placed onto individuals. It was seen as the individual’s responsibility to promote any innovative ideas to senior management. However, no clear process for escalating such ideas exists within the organisation. This potentially resulted in tension, as the structure did not encourage innovation. Implementing a process for the evaluation of new ideas would help foster innovation.

6.3.1.14 Adaptive Leadership

Adaptive leadership is an interactive event in which knowledge, action preferences, and behaviour change provoking an organisation to become more adaptive (Plowman and Duchon 2007). Transfer of knowledge and information is more likely to occur within organisations when employees are interconnected (Fangcheng 2011) with identity and tension as the two main drivers of adaptive leadership (Lichtenstein et al 2006). The formation of a new identity occurs over time when mutually interacting agents define a joint social identity changing how existing rules govern them. The act of defining a joint social identity occurs when agents envision organisational issues

that require new learning, innovation, or new patterns of behaviour thereby engaging proactively or reactively in interactive behaviours in order to address these challenges (Hatch and Cunliffe 2013). An organisation is also referred to as a “living organism” having a shared identity and purpose of being (Nonaka 1991, 97) with relationships amongst agents within this research organisation noted as open and honest with no one harbouring any bitterness towards other agents within the organisation or department.

6.3.1.15 Identity and Tension

Organisational agents respond to environmental tension resulting from interdependencies and interactions at the agentic level generating emergent learning, capabilities, innovations, and adaptability (Lichtenstein et al 2006). Although this tension can be uncomfortable, it is critical for bringing about transformation within the organisation and is therefore an asset that needs to be continually fostered (Plowman and Duchon 2007).

Within this research organisation, leadership issues around the cultural identity of the organisation and its agents were noted. The leadership culture was felt to be missing with predominantly an expatriate senior leadership. Individuals highlighted the lack of vision and key organisation objectives as well as how senior managers exhibit these so that agents at lower levels can embrace them. These issues created a tension at lower agentic levels. Various sections in this chapter discuss other areas of tension dampening creativity and innovation within this research organisation. These are summarised in the summary of this chapter in Section 6.5. However, some tension is needed to facilitate creativity and innovation. The challenge is ensuring the balance between the two forces.

6.3.1.16 Resonate

Individuals through the process of interacting with each other resonate thus dissipating energy and amplifying organisational competences (Hunt and Boal 2009). This influences the self-organising tendency within the organisation (Osborn and Hunt 2007) leading to relationships and fostering adaptive tension (Uhl-Bien and Marion 2009).

The creative product “resonates” with the needs or experience of a group... [therefore] acceptance by a group is significant [as] it provides the creative worker with his final test of reality (Stein 1953, 318).

Further:

When guided by prosocial motivation to take others’ perspectives, employees will channel their intrinsic motivation toward producing ideas that are not only novel, but also useful, thereby achieving higher creativity (Grant and Berry (2011, 74).

The existence of a central dedicated improvement department such as a business improvement department that collated all new ideas and analysed the benefit to the organisation of these ideas is necessary within this research organisation. Such a department provided a focus and an avenue for creativity and innovation to nurture and be recognised. The absence of such a department was detrimental to generating innovation within the organisation. A centralised department can also provide alignment across different departments of the same organisation, as issues similar to the issues that the innovation addresses, may exist elsewhere. This could also assist in overcoming and breaking down silos. The loss of this dedicated business improvement department reflects an important example of social capital erosion with many lost opportunities to capitalise on internally generated creativity and innovation.

Correlation is one of the basic mechanisms for creativity that manifests when agents interact to share their preferences, thoughts, ideas, and assumptions thereby leading to resonance and creation of “attractor pits” (Marion and Uhl-Bien 2001, 396). Individuals highlighted significant interactions between agents who liked each other and those who have an outgoing personality within this research organisation. The BI department within the context of this research organisation was potentially an attractor pit as it was central to the creative and innovative process.

Correlation relates to common understanding that emerges in the process of interactions within social systems motivated by mutual unrecognised human needs

and desires (Marion and Uhl-Bien 2001). Within this research organisation, it was noted that individuals spend significant time at work and therefore, it was seen as important to relate with others openly and honestly so that stress or bitterness within the team is reduced. Some individuals were however very reluctant to socialise and step outside the work environment. It was also noted that there was more stability with being a couple on site as they have and can provide the mutual support necessary. Having a previous close working relationship with someone was also seen as helping to build an effective relationship. Overall, within this research organisation, resonance amongst agents was an accidental by product rather than a result of purposeful organisational strategy facilitating resonance

6.4 Social Capital

The two research objectives discussed under this category are

4. Understand the impact of operationalizing adaptive leadership on organisational social capital particularly transient social capital.
5. Examine how adaptive leadership can influence social capital especially transient social capital.

Seen as closely linked in the data, these two issues are discussed together. Data analysis revealed that there were elements of adaptive leadership present in the case study organization but these elements existed alongside other practices that more closely align with cybernetic leadership. Participant perceptions of factors that hinder/foster creativity and innovation suggest that turnover and the use of contractors requires managing because they introduce an element of instability into the social capital base of the organisation.

Social capital is an asset embedded within the relationships of organisational agents (Leana and Van Buren III 1999), with an inherent characteristic of knowledge that evolves through the interaction activity of agents or groups of agents who do not follow predetermined rules or processes (Subramaniam and Youndt 2005). An investment in social capital requires the development of processes that encourage interactions, relationship building as well as teamwork and cooperation amongst organisational agents (Subramaniam and Youndt 2005). Social capital has a positive impact on the ability of an organisation to stimulate commitment from its agents, in

order to make them more flexible, manage collective action thereby leading to and developing high levels of intellectual capital (Leana and Van Buren III 1999). Individuals within the relationship also mutually maintain social capital and as such, no single party within the relationship has exclusivity over this asset (Burt 2009).

Within the context of the research organisation, as a young organisation with a high churn rate and individuals with short tenure, building relationships that positively add value to the organisation becomes difficult. It would however be beneficial for the organisation to facilitate interactions thereby increasing the chances of building long lasting relationships thus internally increasing social capital. Tension therefore exists between the need to increase social capital through interaction and managing tenure within the organisation.

Social capital interactions described in terms of “micro” are individual interactions in nature, “meso” as group interactions and “macro” that encompass social structure and society as a whole (Smelser 1995, xii). Social capital interactions within the organisation were considered using a Meso and a Micro lens with the Meso lens focusing on “relational and network issues” whilst the Micro lens focused on “psychological and socio-psychological issues” (Bies et al 2007, 789).

Using meso and micro lenses was appropriate within the context of this research organisation to consider interactions between distinct individuals and individuals within a group environment. The micro lens deals with conduct and character of individuals and groups, the macro lens deals with conduct and character of organisations whereas the meso lens deals with a combination of both the micro and macro levels (Miner 2015).

6.4.1.1 Meso

A Meso perspective involves looking at organisational “relational and network” issues (Bies et al 2007, 789) revolving around understanding how the organisation relates to and appreciates agentic participation by acknowledging, recognising, rewarding, and promoting them for their efforts. Relationship building also involves setting up networks that engage with the external mind. Within this research organisation, this allowed internal agents to cross-fertilise or exchange ideas and

opinions with agents from other organisations potentially developing novel solutions to existing challenges. Attending conferences to learn about innovation within the environment as well as targeting previously utilised reputable consultants also assisted in engaging with the external mind.

Hierarchical leaders within this research organisation could also facilitate conditions that allow such networks to form. By providing the required structure and support in the form of decision-making ability and autonomy, they can allow these networks to face organisational challenges (Uhl-Bien, Marion, and McKelvey 2007). “Goal-directedness and serendipitous” processes are two means of networking that explain how new nodes are added and rearranged within a network (Kilduff and Tsai 2003, 88) as well as preferential linking where new nodes connect with popular nodes (Albert and Barabási 2000). Nodes can take the form of new projects, new challenges, new members, or new methods (Kilduff, Crossland, and Tsai *in Press*).

In some cases, networking has allowed this research organisation to acquire and bring knowledge and experience into the organisation, sometimes with agents recommending individuals that they know and have worked with in the past allowing the organisation to tap into the hidden talent market. Relationships and rapport also complement each other as rapport allows organisational and social relationships to flourish and honest conversations to take place (Klonsky 2010). Individuals highlighted that it can get uncomfortable but building personal relationships has helped in establishing good working foundations in the organisation. Existing connections through previous work history or relationship have also assisted in building and maintaining rapport that allows agents to cooperate and work together better. These findings are consistent with arguments that the level of social capital within an organisation potentially determines how successful the organisation is, where the level of social capital is proportional to the success of the organisation (Nahapiet and Ghoshal 1998).

Social capital also potentially changes depending on the relationship and rewards within the relationship, disappearing once the relationship ceases (Leana and Van Buren III 1999). The weak tie theory suggests that individuals who have connections with occasional interaction outside their existing network usually have better access

to rare intelligence and resources for instant insights into working practices or job opportunities (Granovetter 1973). This theory appeared relevant to this research organisation, as connections with the external mind allowed individuals to keep abreast of innovation that happens within the industry. The external mind has also helped identify suitable candidates for roles within this research organisation helping this organisation fill vacancies without spending recruitment dollars.

Whilst this research organisation is seen to be good at building relationships and rapport with the external mind that is required for creativity and innovation to flourish, it also seems constraining, as there is a reliance on the external mind. Such reliance creates tension as the external mind retains the knowledge and skills relating to the innovation. There is the need for the organisation to foster creativity and innovation and retain such knowledge internally.

6.4.1.2 Macro

A macro or a micro perspective can assist in understanding complex systems, as an individual's choices determine their macro behaviour (Spada 2007). Macro structures can explain individual interactions by understanding the agents' social interaction context. The presence of choice as well as inconsistency in needs ensures that individual interactions are unpredictable (Kauffman 1989). As discussed under Social Capital, the macro lens deals with conduct and character of organisations (Miner 2015). This section only considers the macro lens as it deals with understanding the organisational environment and operations. Macro behaviours are also rational as long as they contribute towards the anticipated value at a micro level (Spada 2007).

Commencing a Greenfield operation in a relatively unknown operating environment, this research organisation has faced numerous challenges including understanding the local regulatory and statutory environment, understanding the importance of the local indigenous customs and way of life and dealing with budgetary constraints resulting from labour and material shortages. Overtime when systems become tense or unstable, there will often be a dramatic and sudden release of energy, that creates unexpected order within the system, or emergent outcomes that can potentially be creative in process (Prigogine and Stengers 1997; Uhl-Bien and Marion 2009).

Within this research organisation, harnessing and channelling energy released by being innovative and flexible to dynamic change was crucial to allow this organisation to face its opposition and have competitive advantage. Having a continuous focus on control and compliance is also energy draining for leadership whereas emergent leadership energises the organisation by encouraging free information flow and recognising that conflict within the organisation cannot be avoided (Plowman and Duchon 2007) thereby making the organisation adaptable to change.

Adapting and changing systems move around landscapes that have numerous options or “attractor pits” representing strategies that an organisation can be drawn to and adapt leading to unexpected system changes that result from a fall into an “attractor pit” (Uhl-Bien and Marion 2009, 640). That is, unexpected change could potentially occur when an adapting system selects a different strategy to follow (Uhl-Bien and Marion 2009). Being adaptable fosters an environment of continuous improvement and looking for better ways of processing and doing things usually resulting in better quality of data as well as cost efficiencies. Within this research organisation, good knowledge sharing and transfer was crucial as well as being able to learn on the job by identifying improvements within existing processes that influence productivity in order to “optimise operational efficiency and make life easier and efficient.” Conversely, findings highlighted that the resources sector only has continuous improvement and not radical innovation due to its inherent nature. Mining uses technologically advanced equipment and although innovation within the resources sector is comparable to other manufacturing industries, it cannot be classed as a high-tech industry (Bartos 2007).

To be innovative and foster an environment of continuous improvement requires that this research organisation be selective about projects it chooses to provide resources and fund. Resources can be in the form of freeing up organisational time to allow staff to identify, develop and pursue opportunities for improvement or providing a budget that can be used to tap into the external mind by engaging consultants. Within this research organisation, this generates tension, as resources are required to foster creativity and innovation however, a lack of labour and skills to perform day-to-day activities were issues hindering innovative activity.

6.5 Chapter Summary

This chapter discusses the research data in light of literature reviewed and its implications for the research question and organisation. Research data discussed in three main sections are generally supportive of other researchers in this area who suggest that creativity is essential and required throughout an organisational structure and is the responsibility of each agent within an organisation.

Generating creative solutions as part of a continuous improvement or incremental process highlights innovation to be people inspired or generated by ideas kind of motivated staff. A lack of recognising or rewarding innovative ideas was identified as a root cause of dampening creativity and innovation within the organisation. What has been highlighted through this research is the need to understand the tension required to foster innovation and creativity and how this needs to be balanced against tensions that relate to maintaining the status quo or which demotivate employees.

The collating, assessing, rewarding, and implementing of creative ideas was highlighted as important to facilitate creativity and innovation as it also helps drive motivation necessary for innovation to occur. Trust, resonance, and fear are elements that can either foster or hinder creativity and innovation. Lack of organisation resources, the need for good systems, including of recognition and reward, are required to facilitate and foster creativity and innovation.

Four gaps in research noted in the literature and highlighted in this chapter

1. Knowledge retention that deals with the leakage of knowledge through exit of long serving knowledge workers from the organisation (Levy 2011).
2. Communication between locals and western expatriates in multinational organisations (Jonasson and Luring 2012).
3. The impact of ethno-cultural diversity on creating innovative opportunities (Stahl et al, 2010).
4. Employees “voicing” themselves within organisations (Morrison 2011, 405).

These gaps in research are critical not only to this research organisation as discussed in this chapter but would potentially also assist and address similar constraints in other organisations.

Key findings in relation to areas of tension that dampen creativity and innovation within this research organisation are listed. Key terms are underlined to identify links clearly with objectives in Figure 6.2.

1. Utilising the mission command philosophy to arrive at the end state.
2. Use of consultants to support open innovation and reliance on competitors.
3. Creating and nurturing rich connections across the two distinctly different cultures.
4. Following standard procedures against the need to find new solutions.
5. Silos that discourage knowledge-sharing resulting in learned helplessness.
6. Tension between giving ownership or responsibility and the requirement to adhere to standard operating procedures.
7. Tension due to diversity within teams and in cross-functional teams.
8. Tension from lack of tangible recognition silencing agentic voices.
9. Lack of clarity about what is a normal role expectation regarding creativity and innovation and what is an additional contribution.
10. Tension through lack of funding and dedicated organisational resources.
11. Tension from applying two different management ideologies.
12. The need to consider ideas from across all levels against a structure that potentially discounts these ideas.
13. Tension created by boom and bust cycles which impacts on investment in innovation.
14. Tension arising from language differences between two diverse cultural groups.
15. Tension and challenge in finding the balance between creating an environment for relationships to develop and flourish.
16. Tension from lack of internal organisational structure.
17. Tension from lack of communication relating to organisational strategies.
18. Tension between the need to increase social capital and managing tenure within the organisation.

- 19. Tension as the external mind retains knowledge and skills relating to the innovation.
- 20. Tension due to the need for resources to foster creativity and innovation and a lack of labour and skills to perform day-to-day activities.

Tension is one of the two main drivers of adaptive leadership as discussed in Chapter 6 under Section 6.3.1.15, with the areas of tension experienced within this research organisation summarised in Figure 6.2. Thus, this research proposes that by addressing these areas of tension that address the five objectives of this research will assist in answering the overall research question that motivated this research. It is suggested that this will consequently result in making this research organisation more creative and innovative.

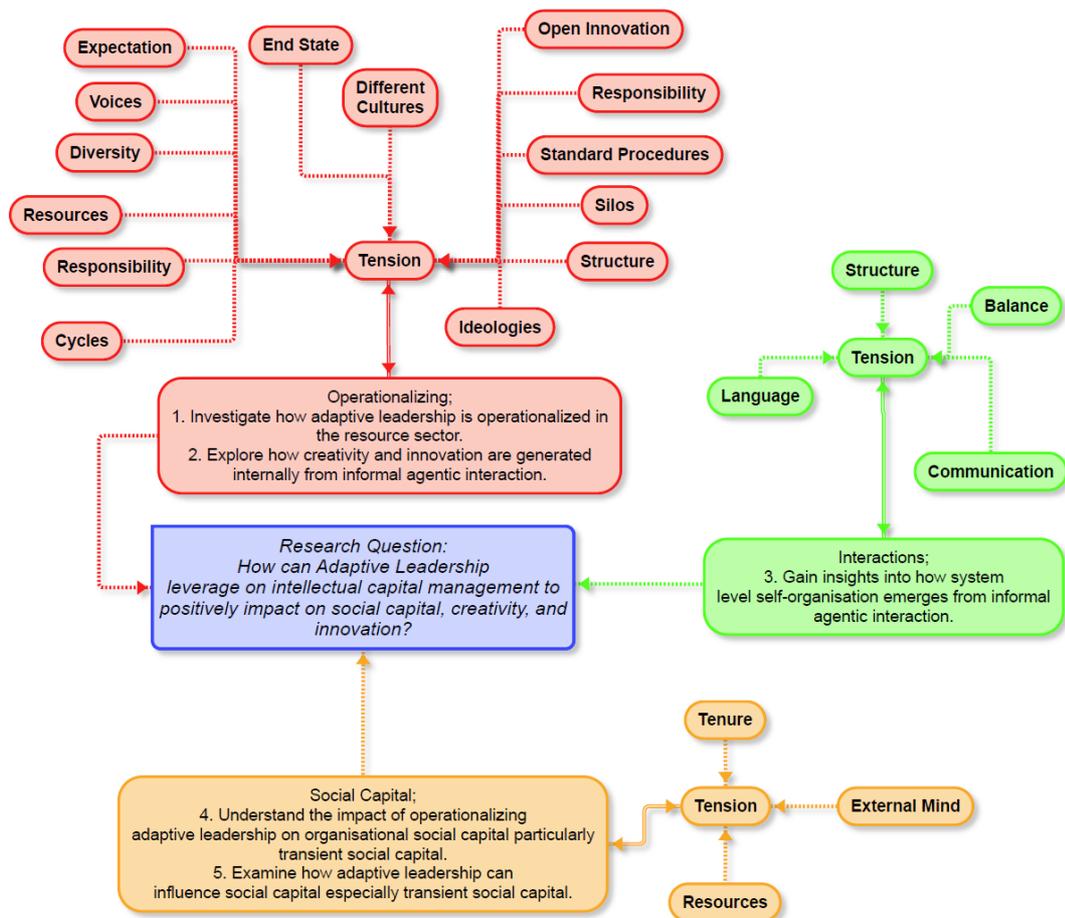


Figure 6.2: Organisational Tension Identified

From the findings discussed and presented in this chapter, Figure 6.3 is also proposed as an overarching model. This model reflects the need for a structural space

that organisations in particular this research organisation needs to facilitate in order to address some of the areas of tension reflected in Figure 6.2.

Structural space is the area of creative tension and innovation that results from the tension generated between maintaining a cybernetic leadership focus against the need to be creative and innovative through an adaptive leadership focus. Potentially, this is seen as the balance required between the need for a standardised process and the need to be creative and innovative within an organisational context. The arrows within Figure 6.3 signify the areas of tension in the internal organisational environment identified in Figure 6.2. These reflect that the organisation is constantly shifting between the two leadership styles. In essence, this structural space becomes an attractor pit with the organisational focus gravitating, dislodging, and shifting by the strength of tension.

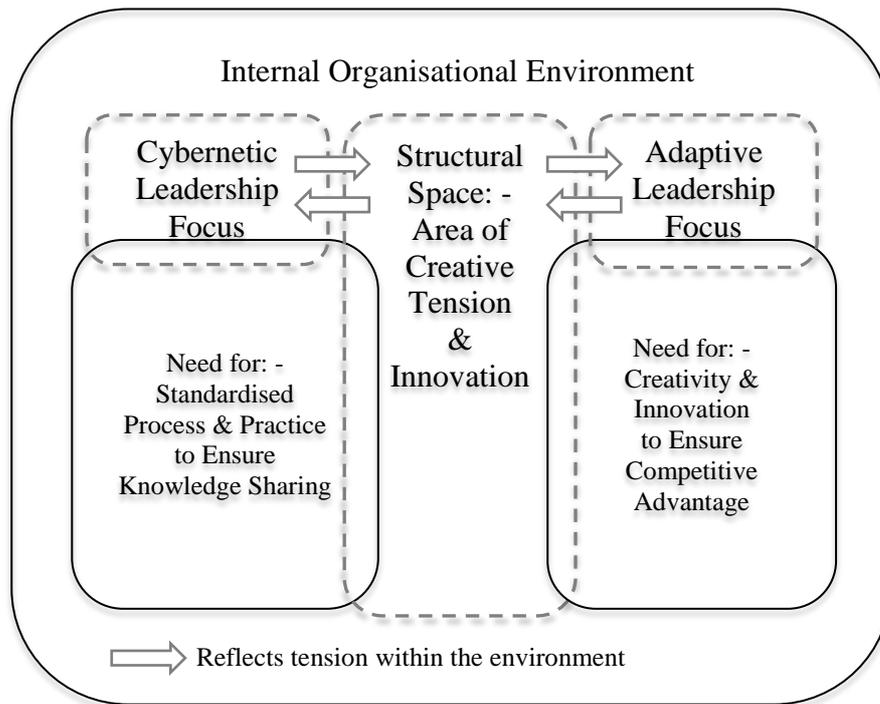


Figure 6.3: Structural Space

The next chapter concludes and discusses the contributions to theory and practice from this research, highlighting limitations and areas of future research. Some final reflections and thoughts on this research study are also shared.

7 Chapter Seven: Conclusion & Recommendations

7.1 Contribution to Theory

The motivation and inspiration behind this research has been to answer the question

How can Adaptive Leadership leverage on intellectual capital management to positively impact on social capital, creativity, and innovation?

The discussion of findings in Chapter 6 highlights a number of areas that generate tension thus hindering creativity and innovation within the organisation that forms the basis of this study. Within this research organisation, tension manifests from the need for a standardised process and practice to ensure knowledge sharing and the need for creativity and innovation to ensure competitive advantage.

The need for standardised process manifests from a cybernetic leadership focus as discussed in Chapter 3. That is, conventional views of leadership have a cybernetic focus, and appear to be reflected in the actions of leaders who attempt to control organisational behaviour in order to achieve specific results. They therefore constrain emerging self-organisation as a divergent activity and in need of control and rectification (Plowman and Duchon 2007). This approach is in keeping with a transactional leadership style (Kanungo 2001), which is found in most organisations.

Within cybernetic leadership, the leaders focus is the external environment whereby the leader makes choices and selects operational strategies that result in expected outcomes for the organisation (Plowman and Duchon 2007). The emphasis in this type of leadership is that the skills possessed by individuals in the workplace assist the organisation to achieve the expected outcomes of strategies selected by organisational leaders. Cybernetic leaders also use relationships as a power source for action within the organisation by understanding the interactional effects and behaviours that result from these relationships (Plowman and Duchon 2007). Leaders can then use appropriate transactions to motivate the individual's behaviour as desired by the leader (Lord 2008).

The need for creativity and innovation to ensure competitive advantage is suggested by a growing literature on an adaptive leadership focus as discussed in Chapter 3.

Adaptive leadership is a collaborative experience through which organisational understanding, actions, and behaviours transform catalysing the organisation into becoming more adaptive (Plowman and Duchon 2007). Adaptive leadership also encourages and mobilises staff to handle harsh challenges, to flourish and routinely go beyond their formal job descriptions (Heifetz, Grashow, and Linsky 2009) that results in functional participation that organisations can rely on to operate more effectively (Bolino, Turnley, and Bloodgood 2002). This approach to leadership emphasises the skills possessed by individuals in the workplace and their capacity to assist the organisation to realise creative and innovative but perhaps less predictable solutions.

Previous research suggested that facilitating and enabling social interactions within the organisation is a benefit to the organisation. Of particular note is the importance of organisational structures and structural spaces to facilitate the generation of ideas and to increase collaboration.

The research in this study illustrated the capacity of one organisation to enable such changes to increase interactions through some of its practices, although it noted that this might not always have been intentional. For example, addressing constraints imposed by the physical space in which people work appears important. The reduction for the organisation from eleven floors down to three has encouraged interactions and helped break down the silo culture. Facilitating and enabling social interactions is congruent to Moitra and Kumar's (2007) view on managed socialisation within organisations.

Having an independent department or area such as a "centre for excellence" (Surie and Hazy 2006, 18) or an "R&D department" (Starovic and Marr 2003, 20; Uhl-Bien and Marion 2009, 645) was also identified as another organisational structural element that facilitates creativity and innovation. The responsibility of such a department or area amongst other activities provides opportunities for the collation, analysis, deployment, implementation, and reward of innovative ideas. The advantage of this type of role and structure was viewed as facilitating and giving social status to creativity and innovation within the organisation.

A second structural feature of the organisations business improvement department more fondly known as the “BI” department was viewed as playing a highly symbolic role within the organisation. The BI department had visibility across all departments and hierarchy levels of the organisation potentially dismantling the existing silo culture. The BI department was seen to foster relationships as well as encourage and reward creativity and innovation within the organisation. As in the case of this research organisation, the loss of the BI department was seen as a demotivating factor creating a lack of direction, limiting individuals from being creative and identifying opportunities for improvement. This finding is also corroborated by some other researchers who state; creating “centres of excellence” (Surie and Hazy 2006, 18), “creating units for purpose” (Starovic and Marr 2003, 20) and “allowing adaptive processes” such as R&D (Uhl-Bien and Marion 2009, 645) will be beneficial to knowledge creation and retention.

A further enabler of social interactions was use of a common language for communication. This was viewed to be beneficial as it avoids problems created through essentialism and thin communication. This is particularly relevant to the gap in research identified by Jonasson and Luring (2012) who discussed the constraints that can arise between two distinct cultural groups within an organisation.

Creativity and innovation are assisted by relational practices and organisational structures that encourage and recognise social interactions. The recruitment and retention of at least a proportion of employees with appropriate skills and experience appeared to assist the organisation in being more creative and innovative.

The study therefore suggests that theories and research on adaptive leadership can benefit from focusing specifically on aspects of organisational life that have little to do with formal objectives and predictable outcomes. This study suggests that explicitly recognising and fostering social interactions, organisational structure, and individual skills can cultivate an environment of creativity and culture that is potentially more adaptable to unexpected external constraints than a cybernetic approach.

7.2 Contribution to Practice

The key contribution to practice is recognition of the need that for creativity and innovation to flourish the organisation needs to foster and maintain a ‘Structural space’ as shown in Figure 6.3. This area of creative tension and innovation results from the tension generated between maintaining a cybernetic leadership focus and the need to be creative and innovative through an adaptive leadership focus. For this organisation, it means that attention must be focused on reducing some of the elements that hinder and enhancing the enablers to maximise the potential for the Structural space to emerge.

A number of elements that hinder creativity and innovation within the research organisation have been identified. Addressing key elements can help this organisation to operationalize adaptive leadership thereby becoming more creative and innovative in the process. These are discussed below. Due to research limitations and the potential scope for further research using a larger sample case, contribution to practice in this chapter is discussed in the context of this particular research organisation.

Having appropriate knowledge management practices in place to build on tacit knowledge is an important foundational structure as tacit knowledge was seen as a power-wielding tool. Tacit knowledge supports creativity and innovation when there is a focus on facilitating knowledge sharing thereby breaking down silos and knowledge strongholds. Having centres of excellence to encourage interactions as well as pool expert knowledge is a strategy that the organisation could implement to foster conditions that act as enablers to innovation and creativity.

Managing and increasing interactions and socialisation amongst organisational agents to foster relationships and facilitate tightness amongst these connections is a further strategy the organisation can consider. A major cause of frustration and tension within this research organisation was the prevalence of two concurrent national and organisational cultures resulted in silo cultures. A more supportive infrastructure and process to foster creativity and innovation aimed at breaking down silo cultures is an important change the organisation can make. A clear

communication policy that allows everyone within the organisation to understand conveyed messages is also needed.

A criticism of this organisation was that innovative ideas were not recognised or rewarded. This was identified as a root cause in dampening the flow of creative ideas within the organisation. There is therefore a need for better systems for recognition and reward, as well as specific resources to apply in order to facilitate and foster creativity and innovation. Taking these steps will help the organisation open up the Structural space thus increasing the possibility that innovation and creativity will flourish at the organisational level.

7.3 Limitations

A key limitation of this study is that it is restricted through the nature of the process in particular the choice of sector, organisation and sample size as well as constraining the study to a pre-defined and identified lens and area of study. Access to participants was restricted to two departments in the organisation and the results may not be generalizable across the entire organisation. The current economic downturn and uncertainty within the resources sector may also have influenced participant views. The research was conducted by an insider and although steps were taken to minimise perceived power differentials or bias it may have constrained some responses.

Due to these limitations, the results from this research study are context specific and cannot be generalised across all organisations and the resources sector. Other limiting factors regarding this research are discussed below.

Potential issues with the framing of this research study were highlighted in discussion with some critical responses to all questions posed. The points raised were considered by this researcher using a reflexive process and were treated as a double-loop learning opportunity whereby a participant is able to ask and question the fundamental aspects of the study and how it has been framed (Argyris 1976).

Discussion also generically revolved around the organisation's current position within the mining life cycle and that opportunity for innovation is limited. As part of setting the context discussion, Chapter 2 considers the different stages of the mining

life cycle with the organisation currently being at Stage B per Figure 2.2: Mine Life Cycle Stages. Potentially, this stage is also the upward slope of a standard life cycle bell curve as indicated by the dotted arrow on Figure 2.1: Mine Life Cycle Curve. The different stages in Figure 2.1 and Figure 2.2 highlight areas of organisational focus within its life cycle when creative and innovative activity is likely to generate positive outcomes for the organisation.

Reward and recognition as a motivator for creative and innovative activities was identified as a challenge as highlighted in Chapter 6 under Section 6.2.1.11. However, a detailed integration and discussion around reward, work engagement and needs theory in increasing creativity and innovation was outside the scope of this particular research study.

Individuals' personality and personality types was discussed as a factor that influences relationships and consequently creativity and innovation with the view that including a personality dimension would have strengthened the study. Aside from discussing and highlighting some personality attributes that potentially enable adaptive leadership, it is clear from the discussion in Chapter 3 under Section 3.3.1.2 that a detailed integration of personality types and their impact on creativity and innovation would have to be a much larger involved study. This was thus beyond the scope of this research study.

The company mindset was also highlighted and whether national cultural philosophies and their impact on business strategy were being taken into account in this study. This research organisation is a foreign owned organisation in a Western environment. It is clear from the discussion in Chapter 3 under Section 3.3.3.1 that understanding the company mindset in more detail would potentially require a study integrating dimensions of national culture with potential gaps in organisational culture and the operating environment. Thereby understanding how the organisational culture can consciously be changed and aligned to a more western mindset. This was outside the scope of this research study.

7.4 Future Research

The limitations section of this chapter highlights potential scope for some future detailed research. These areas summarised below are outside the scope of this research study but are included for other future research and researchers. Areas of future research identified through literature is also summarised here with reference to the original researchers.

1. A detailed integration and discussion around reward, work engagement and needs theory in increasing creativity and innovation.
2. A detailed integration of personality types and their impact on creativity and innovation.
3. Integrating dimensions of national culture with potential gaps in organisational culture and the operating environment thereby leading to an understanding of how the organisational culture can consciously be changed and aligned to the prevailing organisational mindset.
4. Communication issues arising between two distinct cultural groups (Jonasson and Lauring 2012).
5. What are the direct or indirect relationships between interactions, knowledge processes, and competitive advantage (Borzillo and Kaminska-Labbé 2011)?
6. What is the impact of various mechanisms and how can it be measured (Surie and Hazy 2006).
7. What is the requirement to enable social interactions as an articulated process as well as establish this process as an essential component for managing knowledge (Moitra and Kumar 2007)?
8. How do different aspects of knowledge management challenges within global businesses impact organisational life (Kalkan 2008)?
9. Finally, repeating the scope of this research study with a larger sample case resource organisation to ensure similar results are obtained and are generalizable.

7.5 Final Reflections

Throughout a career spanning over 30 years and in four different continents, this researcher has witnessed and experienced differences in cultural diversity, ways of

working as well as management styles from within diverse industries and corporate cultures. The stand out from such a diverse career has been witnessing the stifling of creativity by following standard processes, demotivating staff, as well as the difference in treatment of agents at different organisational levels.

This has undoubtedly resulted in the leakage of knowledge from within these organisations in addition to causing stress and frustration for agents unable to change careers or move organisations due to a lack of skills portability or opportunities. This experience led to the researcher asking the question (amongst many others);

How can an organisation create conditions, which not only allow the organisation to retain knowledge but also assist the organisation in achieving long-term sustainability by being creative and innovative?

After years of contemplation, through this research, this researcher created the opportunity potentially to assist in understanding this personal conundrum. Creativity and innovation are essential and required throughout an organisation for sustained competitive and comparative advantage making it the responsibility of each agent within the organisational structure. The Structural space model will help organisations who are seeking to facilitate creativity and innovation.

Finally, it is important to note that some limitations to this research have been identified and discussed. The added complexity in this researcher's view would be how the identified individual limiting scopes of research can easily be integrated. This would assist to form a more informed view and understanding of the effects of interactions on adaptive leadership, creativity, and innovation. This is a challenge I hope future researchers will undertake.

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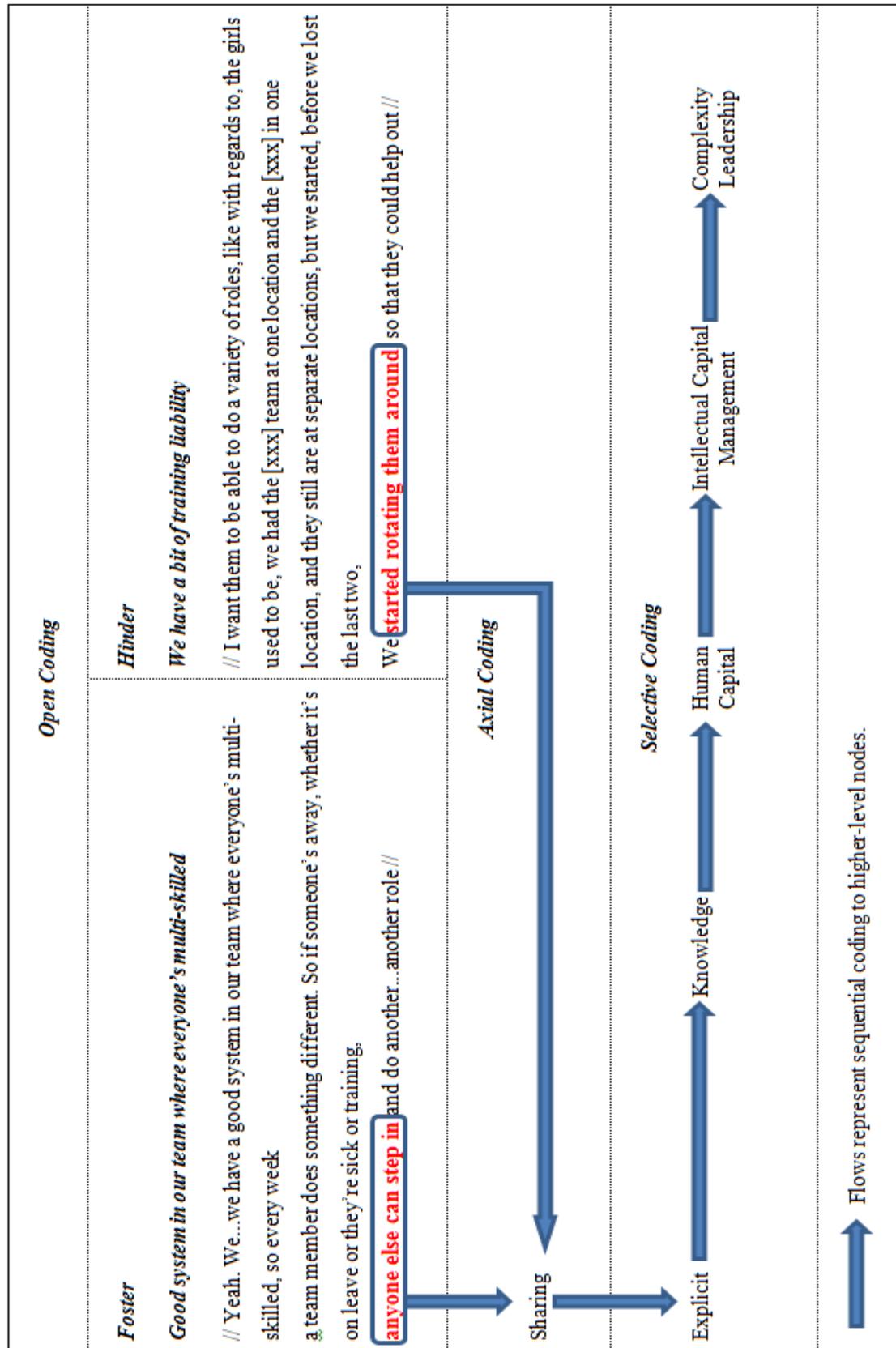
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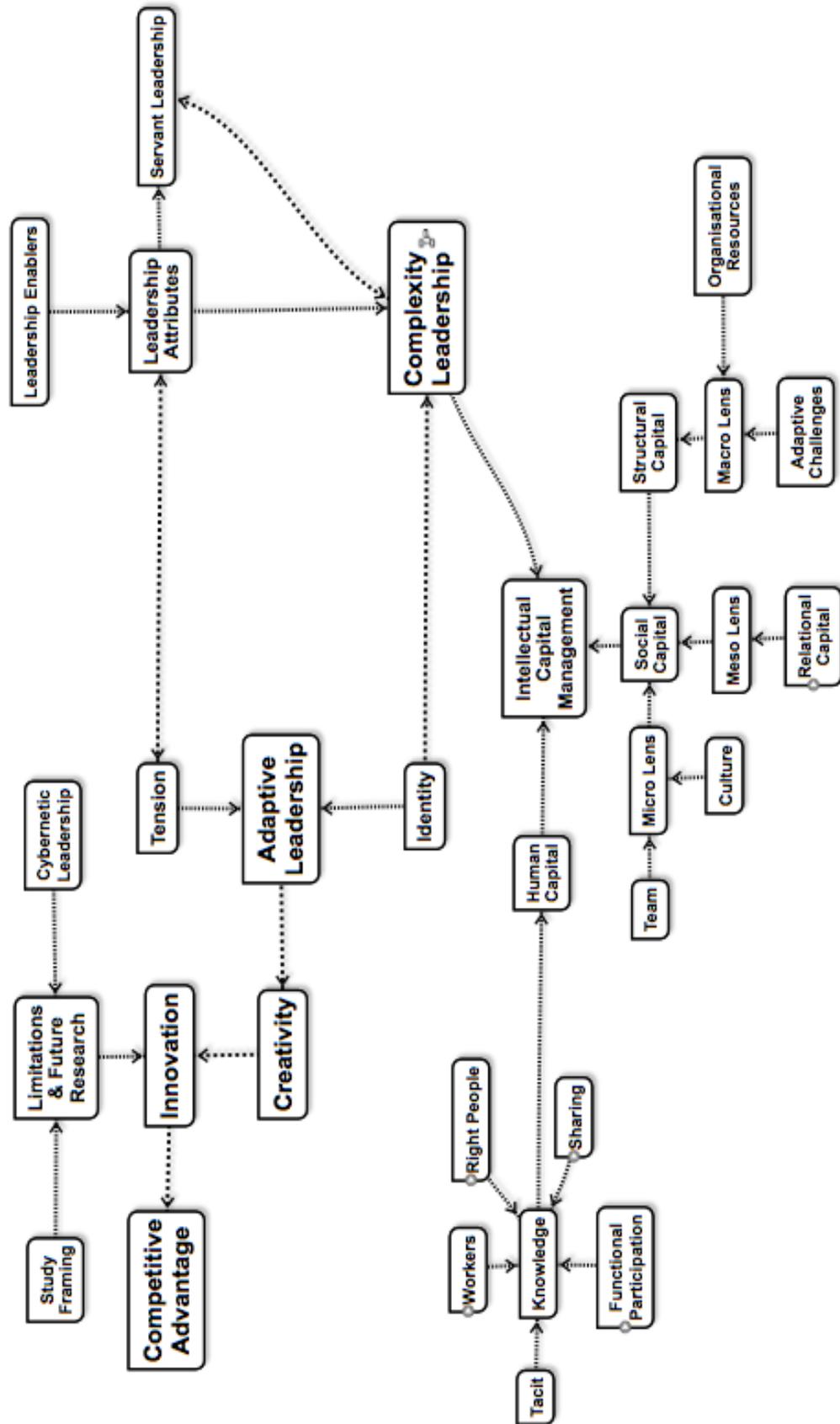
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Appendix 1: Coding Methodology



Appendix 2: Summarised Emergent Themes



Appendix 4: Interview Questionnaire



Project Title: Operationalizing Adaptive Leadership within the Resources Sector.

Preliminary Interview Questions

1. Can you provide me with some background on yourself and how you started work here?
2. How long have you been with this organisation?
3. What interested you in taking part in this study?
4. Broadly, please provide an overview of your department in terms of age, gender, qualifications, tenure, experience etc.
5. Are you aware if any individuals have a history (*i.e. worked together in the past, are in a relationship, are related etc*)?
6. Are any individuals currently in your department transient in nature?
7. How many transient employees has your department had recently and what has been the impact on you and the department working with these employees?
8. Are you still in contact with any of these previous short-term colleagues?
9. What is the responsibility of your department?
10. How does your department fit into the organisation as a whole?
11. Who are your stakeholders?
12. Who is responsible for maintaining these stakeholder relationships?
13. In your view, can you describe the relationships and interactions between the individuals within your department?
14. What are your views on innovation and creativity?
15. What conditions do you believe are necessary for innovation and creativity to be generated?
16. Do you believe these conditions exist currently in your department/company?
17. Please provide examples of recent innovation within the department? If no recent innovation then ...
18. ... Please elaborate on why you think no innovation is taking place.
19. If innovation then please describe how the initial concept of the innovation arose? Was this an individual or group innovation?
20. Can you describe the interactions between the different individuals working on the innovation?
21. Is this innovation a "one-off"?
22. How was this presented to senior management?
23. Was formal approval sought for work to be carried out towards the innovation or was it done using slack resources/individual free time?
24. Did the department or organisation provide any resources?
25. How was buy-in for the innovation sought from senior management/colleagues? Please describe the interactions between the different parties.

26. Were these interactions minuted? If so are copies of minutes available?
27. Is innovation and creativity encouraged within the department and organisation?
28. How is innovation and creativity encouraged, what resources are provided?
29. If no resources are provided what do you believe can be done to encourage or elicit support/resources for innovation and creativity?
30. Is innovation and creativity rewarded? How is it recognised? e.g. monetary (*pay increases*) or non-monetary (*promotion, vouchers*) etc.
31. Is the recognition public or private, individual or group based? i.e. is the innovation and innovator recognised in staff publications or corporate literature?
32. Generally how would you describe the morale within your department?
33. Describe the type of conversations that take place on a typical day.
34. Do individuals socialize after hours? If yes...
35. What activities do they partake in (*i.e. sports, dinner, drinks, or karaoke*)?
36. If no... do you know why such interactions may not be taking place?
37. In your opinion is it the organisations role to encourage such interactions? If so how can the organisation encourage this?
38. Are team-building events organised by the company? If so...
39. ...How often are they organised?
40. If no...do you know why such activity is not taking place?
41. In the process of these events, is there any particular individual who is seen to be taking a lead? If so...
42. ... What qualities does this person exhibit?
43. Are these qualities a result of their position within the organisation or seniority (*i.e. age*) or knowledge (*i.e. experience or qualifications*)?
44. In your opinion, what qualities should a person exhibit to take lead?
45. Can you provide a brief view of the leadership culture within the organisation and department?

That is the end of the formal questions do you have any questions for me?

Appendix 5: Information Sheet



Project Title: Operationalizing Adaptive Leadership within the Resources Sector.

Information Sheet

Research Aim

To understand how adaptive leadership influences organisational social capital especially transient social capital?

Research Purpose

How can Adaptive Leadership leverage on intellectual capital management to positively impact on social capital, innovation, and creativity?

The Researchers

This project is being undertaken to fulfil the course requirements for the degree of Doctor of Business Administration (DBA) at Curtin University. Supervising this project is Desmond Klass, Associate Professor at Curtin University.

Ethical Issues

The research will be conducted in strict accordance with University protocols and ethics as well as with the Australian Code for the Responsible Conduct of Research. Obtaining quality data requires that the participants speak freely, with the assurance that any sensitive information disclosed during interviews is confidential and non-traceable. Confidentiality of participant data is respected at all times. Each participant will be provided with a written guarantee of privacy and anonymity and will be required to sign a consent form, which outlines the nature of the project, and each party's role and responsibilities. Participants will be free to withdraw from the study at any time without prejudice or negative consequence. Neither they, nor the researchers, will receive any reward or remuneration for participating in this study.

Confidentiality

Any information obtained in connection with this study will remain confidential. The results of this study and any written reports will not identify either participant or organisation. All audio files and transcripts will be managed in accordance with Curtin University's ethical research requirements.

Requirements of Participants and Time Duration

Participants are required for a one-on-one, face-to-face interview lasting 60 minutes or less. The interview will be audio recorded for data analysis and research development (see ethical issues section above).

Contact Details

For further inquiries about the study or any matter in relation to this research, please contact:

Associate Professor Desmond Klass:
Curtin Graduate School of Business
Curtin University
78 Murray Street
Perth, Western Australia 6000
Tel: 08 9266 7057
Email: des.klass@gsb.curtin.edu.au.

This study has been approved by the Curtin University Human Research Ethics Committee approval number GSB06-13. If needed, verification of approval can be obtained by either writing to the Curtin University Human Research Ethics Committee, c/- Office of Research and Development, Curtin University, GPO Box U1987, PERTH WA 6845, or telephone 08 9266 2784.

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Appendix 6: Informed Consent



Project Title: Operationalizing Adaptive Leadership within the Resources Sector.

Informed Consent Form

Interviews for the above research project will be one-on-one, conducted face-to-face and digitally audio recorded. Interview times will be scheduled to conveniently suit you. Each interview will take approximately 60 minutes or less. Confidentiality throughout the process is paramount. All identities will be converted to code numbers following completion of the transcription of the interviews. Some interview extracts will be used in the published thesis however, no collected information used in the thesis, any publication or presentation will be traceable to an individual or their organisation. All audio files and transcripts will be managed in accordance with Curtin University's ethical research requirements. Participation is voluntary and you are free to withdraw at any time without fear of negative repercussion or the need to provide any justification for withdrawing.

If you have further questions, please contact Associate Professor Desmond Klass: 9266 7057

Thank you for your co-operation.

I _____ (participant's name) have been informed of, read and understand the purposes of this study and have been given opportunity to ask questions. I agree to my interview being audio recorded and understand that all content remains confidential - that my name will not be associated with any report, publication or presentation arising from this interview. I know where to direct my queries and have a copy of the consent form. I understand I can withdraw at any time.

Signature: _____

Participant: _____

Date: _____

Researcher: _____

Date: _____

Revocation of Consent

I hereby WITHDRAW my consent to participate in the research project described above and understand that such withdrawal will be without prejudice or negative consequences to my employment.

Signature _____

Participant _____

Date: _____

This Revocation of Consent should be forwarded to the Supervisor: Associate Professor, Desmond Klass: Curtin Graduate School of Business, Curtin University, 78 Murray Street, PERTH WA 6000