PROMOTING INNOVATION IN CORPORATE PROJECTS THROUGH LEADERSHIP PRACTICES

By

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Certificate of Authorship / Originality

I certify that the work in this thesis has not been previously submitted for a degree nor has it been submitted as part of requirements for a degree.

I also certify that the thesis is written by me. Any help that I have received in my research work and the preparation of this thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Signature of the candidate

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Abstract

Despite innovation being a highly researched topic and organisations embracing innovation as a part of their strategic fabric, achieving or replicating successful innovation remains largely elusive. While the literature on this topic identifies a rich set of factors that aid innovation - outlining successful innovation scenarios in case studies - it also reflects a gap in our understanding of how to replicate successful innovation. In an attempt to bridge this gap, the research outlined in this dissertation focuses on addressing the issue of a firm's capability with respect to continuous innovation, particularly in a project environment. As the knowledge sought is social in nature, the research was located within the constructionist paradigm and utilised an action research methodology. As such, the environment in which innovation is achieved and replicated is assumed to be an inter-subjectively realised social phenomenon.

The research was conducted within the three corporate projects in TNC[1], a hi-tech multinational corporation. In two of these projects successive innovative outcomes were achieved and this was shown to be primarily as a result of particular leadership practices embedded in the project environment. These practices underpinned the creation of a social environment (or project-culture) in which the team members were able to create innovative solutions to challenging assignments. In particular, such practices promoted holistic understanding of issues, encouraged calculated risk, managed delivery pressures, and facilitated cross-functional collaboration. Significantly the cultural *milieu* in which successive innovative project outcomes were achieved was very different to that of the parent organisation. The main conclusion drawn from this research is that the role of 'local leadership' (middle, and project, management) in an organisation's capacity to innovate continuously is more important than is reflected in the literature. In particular, the nature of the leadership practices that inform innovative action within the corporate project environment requires further research and scrutiny.

[1] The code name TNC is used throughout this report to preserve the identity of the actual corporation.

CHAPTER 1 – INTRODUCTION

1 Introduction

This research addresses the question, '*What is the impact of leadership practices on innovation in corporate projects?*' It identifies how a set of leadership practices create an environment (culture) that promotes innovation through holistic understanding of issues, encourages calculated risk taking and facilitates cross-functional collaboration. In this chapter, I describe the journey that led me to doing this research and how I refined my research question en route.

Two incidents sowed the seed for this research as early as twenty-five years ago. The first was at the start of my career as a young mechanical engineer in a tool room that was struggling to balance emergency break fixes with new tool manufacture. Once I gained sufficient acceptance at the workplace, I altered the prevailing work-loading methods and the tool-making practice; an act which quadrupled the new tool output without requiring any additional capacity. I tried to understand what enabled me to identify this gap which my predecessors had overlooked and whether a replicable process of 'discovery' could be constructed. I discussed this with the experienced Industrial Engineering and Process Planning engineers of the company but they dismissed my actions as a routine application of elementary Industrial Engineering techniques, failing to answer my question as to why this obvious solution had not been implemented earlier given the strong Industrial Engineering and Process Planning practices within the company. I learnt that thinking outside of the conventional practices and, in the process, demystifying them was not appreciated by the body of engineers with whom I was working.

The second incident came a few years later in my career when I was a budding software project manager. I was leading a project to migrate a complex insurance application package comprising 1.2 million lines of COBOL and 1.0 million lines of Job Control Language code to a new platform that ran a different operating system and under a different COBOL implementation. The project was estimated to be in excess of thirty man-years of intense manual effort that included extended testing. With a team of two, I tried a few simple

techniques of leveraging the compiler, operating system, the nuances of the COBOL language and the repetitive patterns in the application code to create a method of automating the migration. I adapted this method to assist in the building of a toolset which was iteratively embellished as understanding of the source code increased. Using this toolset, I accomplished the project with just six man-years of effort and the migrated code was far more accurate than what could be achieved through manual methods.

The engineer in me tried to analyse this approach to problem solving and adapt it to being applicable in other contexts as well. I approached my employers (one of the largest and most highly regarded software houses in the world) to help me in this endeavour and I was asked to explain my process to a panel of experts. These colleagues quickly labelled the technique as no more than the adoption of object-oriented development techniques (an emerging set of techniques at that time).

Undeterred by this bureaucratic response, I tried to find answers to my questions through the business literature. This delivered a broad array of answers, ranging from customer-centric and value-focused strategy (Peters & Waterman 1982) to competitive strategic advantage (Porter 1980, 1982) and the identification and exploitation of an organisation's core competency (Prahalad and Hamel 1990; Hamel & Prahalad 1994). Thereafter business process re-engineering was espoused (Hammer & Champy 1993) until innovation began to dominate the business lexicon alongside the notion of disruptive technologies (Bower & Christensen 1995; Christensen 1997), resulting in the creation of the term disruptive innovation (Christensen 1997). Hammer (2005) followed suit by re-branding business process re-engineering as operational innovation, and Hamel (2006) coining the term management innovation to denote disruptive management practices. Soon the espoused competitive strategy of most organisations was innovation.

During the same period business writers were analysing mercurial business leaders such as Lee Iacocca, Jack Welsh and Lou Gerstner, trying to decipher their success formulae. In this respect, every methodological innovation - from Toyota's lean production process to General Electric's six sigma method – was scrutinised and heralded as the basis of organisational success. New factors, such as culture and a conducive learning environment (Collins & Porras

1997) and having the right set of people and a clear mission (Collins 2001; Bossidy & Charan 2002) were identified as critical to success. In spite of such widespread acclaim regarding these 'critical success factors', attempts to realise success through them were seldom successful.

Ohmae (1982) had earlier questioned this quest for the proverbial silver bullet, arguing that business success cannot be reduced to a formula and achieved solely through accessing the forms of explicit knowledge that the search for the X-factor approach had encouraged. He recognised that the epistemological issues underpinning organisational success were far more complex than the popular business literature was advocating. He postulated that *tacit* knowledge, a form of knowledge difficult to create and to share, was probably an important differentiating factor in organisational success.

Through my reading, I began to realise that my inclination to work differently could be viewed as innovative. I commenced the research with two assumptions: that innovation thrives within a particular kind of ecosystem, and that innovation can be measured and graded into an Innovation Maturity Model akin to the Software Engineering Capability Maturity Model (Paulk et al. 1995). As these assumptions reflect, the engineer in me wanted to 'processise' (decode a set of activities and create a repeatable process) innovation in such a way that it could be measured, graded and repeated. My initial review of the academic literature on innovation enabled me to understand the distinctions between creativity, invention and innovation; and between different types of innovation. With my limited knowledge of the topic, I initially viewed innovation as an output-driven phenomenon. Since corporations were entirely output driven, I assumed that I could correlate innovation and corporate success. I studied the financial statements of successful corporations and tried to equate their patents and products as direct output of their rich ideation (an important aspect of innovation). In many instances I observed that such ideations were not always focused on delivering a significantly new product. Frustrated by the lack of promise of this direction, I decided to correlate the talk-language or articulated company focus and the desired cultural directions of C-level executives of successful corporations. This foray was equally unsuccessful as there appeared to be no correlation between the calibre of 'talk languages' and organisational success.

I recommenced a review of the academic literature (details in Chapter 2: Literature Survey) and this time was introduced to the sociological research on innovation. Immediately my ontological assumptions were challenged in that the concept of innovation was viewed as a phenomenon that is inter-subjectively realised within a socially constructed reality. This literature opened up a new avenue to explore and suggested that innovation and knowledge creation are closely related (Nonaka and Takuchei 1995). In one of the discussions with my university supervisors, I was expressing my difficulty in connecting what I was reading with what I was experiencing as a practising manager. When they picked out the word 'practice' and suggested that I attempt to explicate it - thus began my exploration of the practice domain, beginning with the 'strategy-as-practice' (Whittington 1996; Chia 2004) literature followed by that of 'leadership-as-practice' (Carroll et al. 2008).

Chapter 2 of this thesis covers my journey through the literature and articulates how it helped me to crystallise the research question and to build the appropriate frames of reference for my research. During this journey, I transformed from being a die-hard positivist to becoming a social constructionist, with the nature of my research transitioning from a quantitative to a qualitative epistemology. I commenced the literature survey with a set of nebulous research questions: '*What makes innovation happen in corporations, especially in a project environment? What is the role of leadership in inducing innovation? Does an innovation scenario have signature properties like an ecosystem or culture?*' The literature survey helped me refine my focus and my research question to *'What is the impact of leadership practices on innovation in corporate projects?*' Details of how I arrived at the methodology and the research design are provided in Chapter 3 of this thesis.

As a part of the field work, I chose three different corporate projects to study. The first was a typical multi-million corporate project on which I had no direct delivery responsibility. The second was a project in an area of my department on which I had sound knowledge. The third was a project foisted upon my department by senior management, on which we had limited expertise or knowledge. Although the three projects were significantly different, each offered rich learning experiences with respect to addressing the selected research question ("What is the impact of leadership practices on innovation in corporate projects?"). Chapters

4, 5 and 6 describe the action research processes conducted in the three projects in detail and Chapter 7 analyses the research results.

In Chapter 8, I discuss the results and present my conclusions. I conclude that innovation in projects is greatly influenced by the leadership practices of the immediate managers (or local leadership) within the projects. The genesis of such leadership practices centres on the ability of the local leadership to manage a complex array of practices that include problem formulation, learning promotion, knowledge creation and risk ownership within a project team.

The Appendix provides the background documentation of the three projects.

CHAPTER 2 – LITERATURE SURVEY

2 Literature Survey

I commenced this literature survey to gain clarity and deeper understanding of the prevailing bodies of work relating to my emergent research questions:

> *What makes innovation happen in corporations, especially in a project environment?*
>
> *What is the role of leadership in inducing innovation?*
>
> *Does an innovation scenario have signature properties like an ecosystem or culture?*

Since the terms innovation and creativity are interchangeably used in business parlance, I began exploring their definitions and their relationship in order to frame my research appropriately. Through this exploration I observed a strong correlation between knowledge creation and innovation, with knowledge creation appearing to underpin an organisation's innovative capabilities. This led me to delve further into the concept of knowledge in order to understand its nature; how it is created; and its relationship to learning.

From the theories of learning and knowledge creation, I realised that learning and knowledge creation are intense social activities characterised by collaboration. I also realised the profound consequences that such activities have for the status quo: learning and knowledge creation, if embraced, lead to the transformation of mind-sets and changes to accepted practice, which, in turn, impacts upon interests that are vested in retaining the status quo. This challenge to the status quo raised the issue of leadership and, in particular, the leadership practices that facilitate the kind of learning and knowledge creation that leads to innovation.

During the course of this literature review, it became clear to me that the research would have to adopt a methodology that recognises the social dynamics of the 'act' of innovation as an inherently collaborative process that has transformative implications for many aspects of an organisation's traditional assumptions and practices.

I was refining my research focus with every step of my literature survey. I started with definitions, moved on to reviewing the prevailing theories and gravitated to learning, knowledge creation and leadership practices, the centre pieces of my research question. This

chapter is structured to reflect this evolutionary course as follows. Section 2.1 discusses creativity and innovation. Section 2.2 reviews the theories on innovation, the research paradigm and methodology. Section 2.3 discusses the role of learning and knowledge creation in innovation. Section 2.4 discusses leadership practices and the underlying practice theory. Section 2.5 summarises the learning gained from the literature review and how this led to the crystallisation of my research question.

2.1 Creativity and Innovation

2.1.1 Creativity

The terms creativity and innovation are often interchangeably used despite significant differences in their meanings. Creativity is about having and articulating new ideas that are useful in solving problems or transform an existing domain into a new one through the idea (Csikszentmihalyi 1997; Brodtrick 1999; Franken 2007). Creativity is not merely the production of ideas but the generation of ideas that are applicable to an identified opportunity and that offer value to a stakeholder collective (Moultrie & Young 2009). Leonard & Swap (1999) argue that creativity is the starting point of innovation while Amabile (1996) sees it as a necessary but not a sufficient condition for innovation. Dovey & Mooney (2012) argue that, in this respect, ideas can be viewed as a source of conceptual capital – a vital set of intangible resources – and they agree with Amabile (1996) that such resources have strong contextual (especially relational) dependencies. Operating from a constructionist theoretical perspective, Dovey & Muller (2011, p.615) highlight the importance of social factors, such as requisite diversity and creative abrasion, on creativity:

> (T)he literature is clear that broadly collaborative practices are essential to the generation of relevant and rich ideas and that, in general, two conditions greatly enhance the effectiveness of such practices. The first condition is that of requisite variety in the social composition of the group, with participants drawn from backgrounds that provide them with perspectives that disrupt the dominant cultural conventions and taken-for-granted assumptions of other participants (Gryskiewicz 1999; Sonnenburg 2004). The second condition is the enactment of

> the practice of creative abrasion whereby participants are able to confront each other over the value of ideas without the process degenerating into ego battles and sectarian conflicts (Leonard-Barton 1995).

The nature of the concept of creativity is dependent upon the assumptions held by a particular research community. As Magyari-Beck (1994) points out, the meaning of the concept depends upon the ontological and epistemological assumptions that underpin the philosophical paradigm within which it is viewed. In this respect, Dovey & Muller (2011, p.614) point out that,

> while positivist research into creativity has been concerned primarily with the identification and objective measurement of the traits of creative individuals (Eysenck 1994), more recently research emanating from alternative philosophical paradigms has challenged the notion of 'the creative individual' and argued for creativity to be seen as a socially constructed phenomenon that is contingent for its meaning on contextual and situational factors (De Cock, 1996; Rickards & Moger 2006).

At a macro level, Florida's (2002) research identifies indices of creativity within cities and regions across USA. He postulates that creativity can be induced in a community (or region/city) by encouraging a high concentration of creative professionals to locate within them.

2.1.2 Innovation

According to Schumpeter (1934), innovation is delivering a product or service that produces economic benefits. Romer (1998) views innovation as driving economic growth by aiding capital generation through new technologies, while Glor (1997) sees it as the conception and implementation of significant new services, ideas or ways of doing things. Drucker (1998) equates innovation to entrepreneurship by viewing the practice of systematic innovation as the very foundation of entrepreneurship. Moore (2003) sees innovation as the activity of putting creativity in service to economic returns. Manu (2011) is very definite that innovation is not a process but an outcome:

> Innovation is a noun: a result, a new way of doing things. I believe that understanding the meaning of innovation as a concept is the first step in creating an innovation producing enterprise.

He reiterates this idea even more in his book (Manu 2010, p.2)

> … innovation is an outcome, not a process. Organizations fancy the latter because processes can be managed, and this is what organizations are good at. This hides the lack of expertise – and mindset - in creating and managing a culture of innovativeness, and an organizational ecology populated by innovation "connoisseurs" rather than innovation managers. The management of the outcome is much different than the management of the process, and this is where definitions are important: innovation is an outcome achieved by a multiplicity of processes, some including imagination, creativity or simply repetitive tasks. … When you treat innovation as an outcome, the role of a business organization becomes that of creating the tools, objects and services through which people can manifest what they want, who they are and who they want to become. In this view, all innovation is aspirational.

There is strong support in the literature for a dialectical relationship between innovation and knowledge creation (Drucker 1993; White & Dovey 2004; Chesbrough & Teece 1996; Edmonson et al. 2001, 2003; Florida 2002, 2004, 2005; Nonaka 1991; Nonaka & Takeuchi 1995; Takeuchi & Shibata 2006). According to Schumpeter (1934) entrepreneurialism drives the establishment of learning contexts for knowledge creation and innovation, while Peschel & Fundneider (2008) argue that innovation is a 'socio-epistemological process of learning from the future'.

Dovey & Muller (2011, p. 615) draw attention to the role of leadership in innovation:

> While defining innovation as the realization of relevant and promising ideas, the research literature warns that, because of its highly political nature, such realization is very difficult to achieve in practice (Barsh 2008; Barsh et al. 2008). Human endeavour is characterized by competing interests, and ideas that support prevailing power interests are more likely to be realized than those which threaten such interests (Simonton 1984). The status quo is thus far more likely to prevail

even when change is in the interests of the stakeholder collective (Dovey & Fenech 2007).

Thus from the literature it appears that knowledge is both a driver of innovation and an outcome thereof, with leadership playing a vital role. I will return to the topic of knowledge and leadership for innovation in organisations later in this chapter.

2.2 Theories of Innovation

The literature addressing innovation in organisations can be classified into one of three research paradigms: positivism, interpretivism and constructionism. Table 2-1 summarises the methodologies employed within each of these paradigms.

Research Paradigm	**Methodology**	**Data Type**	**Approach to Innovation**
Positivist	Experiments	Quantitative	Traditional research and development (R&D) and planned organisational initiatives approach to innovation. Ref: Amabile (1988, 1998); Christensen (1997); Edmondson et al. (2003).
	Surveys	Quantitative	Canvassing approaches to innovation across a broad range of organisations. Ref: Gladwell (2000); Collins (2001).
Interpretivist	Phenomenology Grounded Theory Ethnography	Qualitative	Focused upon innovation within one or a cluster of similar organisations. Ref. Kofman & Senge (1993); Nonaka & Takeuchi (1995); Liker (2003).
Constructionist	Action Research	Qualitative	Focused upon attempts to introduce or enhance innovation within a single organisation. Ref. Schumpeter (1934); Malone (2009); Oliveria (2009); Dovey & Mooney (2012).

Table 2-1 Paradigms Underpinning Innovation Research

2.2.1 Positivist Theories

Theories such as Lean Production (Womack et al. 1990), Business Process Reengineering (Hammer & Champy 1993), Core Competency (Hamel & Prahalad 1994), and Disruptive Innovation Theory (Christensen 1997) explain innovation as an outcome derived through organisational vision, strategy and drive. These theories imply knowledge as a primary resource for innovation and accord primacy to leadership vision and direction in engineering innovations.

The componential theory of creativity and innovation (Amabile 1988, 1998; Amabile et al. 1996), explains innovation as occurring through three broad organisational factors namely: (a) organisational motivation to innovate, (b) resources – providing sufficient time for producing novel work in the domain targeted for innovation and (c) managerial support. She developed an instrument referred to in the literature as KEYS (Amabile 1995) which quantitatively assesses the dimensions of the work environment that have been suggested in her theory.

Other positivist attempts to theorise innovation include inconclusive attempts to derive a mathematical model by correlating innovative outcomes with a set of factors (Damanpour 1991; Govindarajan & Kopalle 2006).

Both Woodman et.al. (1993, p. 315) and Peschel & Fundneider (2008) concluded that theorising innovation - a highly subjective social construct - within a positivist framework is inappropriate. They attributed the inability of positivist theories to explain innovation comprehensively to (a) the failure to recognise the underlying intangible social factors in innovation; (b) the limitations of positivist ontological assumptions; and (c) methodological problems that stem from the epistemological assumptions that underpin positivist theories.

2.2.2 Interpretivist Theories

Nonaka & Takeuchi (1995), Liker (2003), Kofman & Senge (1993) theorise innovation from an interpretivist perspective, viewing innovation in terms of cultural phenomena. Nonaka &

Takeuchi (1995) explain innovation as an organisational knowledge creation process that is extensively supported by the organisational culture and structure.

Nonaka (1991) describes the significant structural differences between oriental and western corporations. Oriental perspectives view organisations as living entities and place high values on shared beliefs and relationships, whereas the western perspectives view organisations as economic entities characterised by transactional relationships. The western paradigm views middle managers as irrelevant to innovation whilst the oriental paradigm views them as a vital layer linking top management to operational layers, and serving as key holders of relationship knowledge and cultural values. Nonaka (1991) argues that it is the underlying culture that has enabled Japanese companies to be more innovative than their western counterparts.

Liker (2003), in his analysis of innovation at Toyota through Toyota Production Systems (TPS), ascribes the success of Toyota's innovation capability not to the TPS process but to its underlying cultural constructs that encourage experiential learning and learning through mentoring. He attributes the failure of Toyota's joint venture plant with General Motors to replicate the innovation model to the absence of, or inability to create, the necessary underlying cultural and social structures.

Kofman & Senge (1993) drawing on the oriental philosophical themes of self-realisation and relating the self to the wider community, theorise that innovation happens through introspection and relational interactions in an organisation built by servant-leaders[2].

2.2.3 Constructionist Theories

Contrary to positivist that explain innovation in terms of leadership vision and direction and intrepretivist theories that explain innovation in terms of cultural phenomena, constructionist theories explain innovation through social agency i.e. dynamic action and *in*

[2] Servant-leaders achieve results for their organisations by giving priority attention to the needs of their colleagues and those they serve. Servant-leaders are often seen as humble stewards of their organisation's resources (human, financial and physical).

situ coping of the actors within a social theatre. The case studies on Brazil Bank and State Bank of India (Malone 2009) illustrate a strong action research based approach to innovation.

Schumpeter (1934) in his theory of creative destruction, an economic theory of innovation and progress, identifies the construction of the requisite knowledge through a process of transformation initiated by innovative entrepreneurs as the driver for successful innovation. Referring to innovation in large organisations, Dovey & Mooney (2012) emphasize the role of *intrapreneurialism* – an innovation-promoting role that is manifested through covert action rather than organisational decree.

As a by-product of this segment of literature survey, I arrived at a critical understanding that innovation is a learned behaviour that is enhanced through collaborative interactions. Aristotle summed up this position as: *We are what we repeatedly do. Excellence, therefore, is not an act, but a habit*. More recent researchers concur with Amabile (1996) that creativity is a learnt skill and not a hereditary or genetic disposition and with Blohowiak (1992) that innovation is a consequence of a set of *practices* that are difficult to articulate explicitly.

The emphasis in the literature upon the role of learning and knowledge creation in innovation influenced me to explore theories of learning and knowledge creation in order to understand these phenomena better.

2.3 Role of Learning and Knowledge Creation in Innovation

Since knowledge creation and learning are closely related and feed off each other, in this section I explore how knowledge is created, how knowledge is a form of social capital; and how this intangible asset plays a role in innovation. The term social capital refers to both the network of relations and the assets that can be mobilised by such networks (Nahapiet & Ghoshal 1998). I follow this with an exploration of the concepts of learning, organisational learning and the factors that influence and promote learning in organisations. This set of discussions builds on the discussion conducted towards the end of section 2.1, where based on evidence from the literature; I indicated that knowledge is both a driver and outcome of innovation.

2.3.1 Knowledge Creation and Social Capital

Knowledge is composed of both articulable (explicit) and non-articulable (tacit) components. Explicit knowledge is easily articulated, 'codified' and transmitted in formal symbolic languages. Tacit knowledge is context-specific, acquired through experience, rooted in action and difficult to articulate. Explicit and tacit knowledge do not exist as mutually exclusive categories but exist as in continuum (Polanyi 1966). The famous Polanyian quote *we know more than what we can tell* sums this up succinctly.

Nonaka & Toyoma (2003, p.3) define knowledge as a particular view of reality rather than the entire reality; and the creation of knowledge is an intense inter-subjective activity where different views of reality are synthesised to form a broader view. In their words:

> Knowledge is not just a part of the reality. It is a reality viewed from a certain angle. The same reality can be viewed differently depending on from which angle (context) one sees it. In knowledge creation, one cannot be free from one's own context. Social, cultural, and historical contexts are important for individuals (Vygotsky 1986) because such contexts give the basis for one to interpret information to create meanings. Hence, in knowledge creation, one tries to see the entire picture of reality by interacting with those who see the reality from other angles, that is, sharing their contexts.

According to Nonaka & Toyoma (2003) knowledge is created through a continuous process of SECI - Socialisation (sharing and creating tacit knowledge through direct experience), Externalisation (articulating tacit knowledge through dialogue and reflection), Combination (systematising and applying explicit knowledge and information) and Internalisation (learning and acquiring new tacit knowledge through practice). In the SECI model, knowledge creation is conceptualised as a dialectical process in which various contradictions are synthesised - instead of balanced - through dynamic interactions among individuals and the organisation. The key word here is 'synthesising' which is an amalgamation of multi-context views to arrive at a more informed view of the reality rather than gravitating to an easier and democratically appealing lowest-common-denominator mode (Nonaka & Toyoma 2003).

Nonaka (1994) argues that the speed and direction of knowledge creation mirrors an organisation's innovative capabilities. According to him, knowledge creation in organisations is profoundly influenced by its culture and structure. This SECI process of knowledge creation is facilitated by '*ba*', which is a shared context in motion that promotes positive interactions between the individuals and the organisations. '*Ba*' is facilitated by a structure that promotes viewing the corporation as an organic knowledge creating entity as opposed to the Taylorian model of viewing the organisation as an information processing entity.

According to Nonaka (1991), the traditional Japanese corporation that is centred on the middle management layer inherently promotes '*ba*'. Such organisations are efficient in knowledge creation, as middle managers act as key holders of relationship knowledge and accord high value to shared beliefs and relationships. Toyota's empowered workforce that can halt a production line (Liker 2003; Nonaka & Toyoma 2003) and the State Bank of India (SBI) team that navigated new product lines (Malone 2009) are examples of learning and knowledge creation facilitated through organisational structures. In the former, the organisation was explicitly organised for knowledge creation whilst in the later managerial manoeuvring within the prevailing structure provided an impromptu setting for learning and knowledge creation to happen. In organisations that are culturally and structurally not aligned for knowledge creation, maverick non-formal methods of supporting knowledge creation (innovation) such as intrapreneuring, skunk-working and bootlegging are used to create new knowledge albeit in pockets. Such practices are discussed later in this chapter.

From these discussions it emerges that knowledge creation, being an intense social process, is a form of social capital. The positive relation between social capital and knowledge creation is typically explained by combination and exchange processes, where the combination takes the Schumpeterian view of the foundation for economic development, and exchange refers to social interaction and co-activity that creates new knowledge (Nahapiet & Ghoshal 1998).

Social capital manifests through the shared norms, trust and reciprocity that are derived from these relationships (Bourdieu 1986). It represents the value of social dynamics within an environment that manifests as culture. The case studies on Brazilian Bank (Oliveria 2009) and

State Bank of India (Malone 2009) imply that formations of micro-cultural bubbles grow into corporate-wide phenomena that drive innovative outcomes. From these discussions, it is evident that managers who facilitate a favourable culture play a vital role in the generation of social capital - an issue that I will explore later in section 2.4 Leadership Practices.

2.3.2 The Concept of Learning

Very often organisations have to learn how to learn to be innovative (White & Dovey 2004). The knowledge they are seeking is contextual and does not exist 'out there' waiting to be discovered but has to be created in situ through collaborative action (Dovey & White 2005). While Bandura (1977) sees learning as a process, Nonaka & Takeuchi (1995) view it as an outcome that manifests as knowledge.

Social theories of learning by Vygotsky (1986), Piaget as quoted by Atherton (2011) and Bandura (1977) state that people learn from one another by sharing experiences through observation, imitation and modelling. Learning happens when learners fit new information together with what they already know as a process of mental-construction. Social theorists believe that the boundaries of cognitive growth are established by societal influences and that social interaction plays a fundamental role in the process of cognitive development. Management theorists, when discussing learning in organisational contexts, focus upon cultural influences on learning and argue that culture is influenced by leadership disposition (Amabile 1996; Edmondson et al. 2003) and organisational structures (Nonaka and Takeuchi 1995). All of these theorists thus share the view that learning is influenced by context – particularly the social context – and that learning is an intense social process involving extensive sharing of knowledge, information, assumptions, insights and beliefs. Through this interactive process new knowledge is constructed.

2.3.3 Organisational Learning

Organisational learning is the way by which organisations build, supplement and organise knowledge and routines around everyday activities and adapt and develop organisational

efficiencies by improving the use of the broad skills of their workforce (Dodgson 1993). Organisational learning comprises both collective and individual learning. Organisation structures and strategies encourage and coordinate a variety of interactions (of individuals and groups) in learning. The literature on 'organisational learning' and 'learning organisations' distinguishes between several types of learning: of particular importance and relevance to this research are the works of Argyris (1973); Nonaka & Takeuchi (1995); and Kofman & Senge (1993).

2.3.3.1 Learning Types

Argyris & Schön (1978) identify three typologies of learning, namely single-loop, double-loop and deutero-learning. Learning that is oriented to solving a specific problem is termed as single-loop learning; learning that involves reviewing existing mental models and perspectives to establish new premises is termed double-loop learning. When an organisation learns to carry out both single- and double-loop learning, it is said to be in deutero-learning. Kofman & Senge (1993) raise the issue of transactional versus transformational learning. Transactional learning builds competencies which enable the learner to perform better but it does not lead to the questioning of deep-seated beliefs and mental models. In transformational learning, the learner thinks about and interacts with the problem differently: s/he questions his/her assumptions, and eventually alters the mental models which may be inhibiting the development of innovative ways to address the problem. Transformational learning is the corner stone of learning organisations as it addresses and transforms the cultural *habitus* through theoretically sophisticated forms of collective critique and action.

Transactional learning leads to the development of functional skills and could be equated to single-loop learning whilst transformational learning is a collaborative, questioning, phenomenon that encourages participants to experience the problem at different levels, and promotes learning about, and understanding of, the issues in ways that produce new insights and which potentially lead to innovative solutions. In this sense, transformational learning equates to double-loop learning.

A practical implementation of transformational learning can be found in the 'Genchi Genbutsu' processes in the Toyota Production Systems (TPS) where mental models are altered through introspection. This process calls for understanding the situation thoroughly through personal observations without preconceptions. It is a day-long activity of meditative observation intended to foster connectivity to a particular 'reality' in order to enable participants to transcend their prevailing mental models. Taiichi Ohno, the father of TPS is said to have drawn a circle in the plant, brought an executive at the start of the day and made him stand in that circle for the entire day without breaks and with no explicit instructions. Late in the evening, Ohno would come back to fetch the individual and send him home without any debriefing or discussions. This was Ohno's method of enabling his executives to learn the reality of the production plant and sculpt their mental models in line with that reality. The circle he drew on the floor later became the famed Ohno Circle (Liker 2003). Genchi Genbutsu can also be viewed as a manifestation of Kolb's learning cycle (Wirth & Perkins 2008) that recognizes the need for both active and abstract dimensions in learning. The cultural orientation underpinning TPS appears to have been predicated on learning and meta-learning (learning to learn).

2.3.3.2 Factors Influencing Learning

From the Social Learning Theory of Bandura, we understand that organisational learning is stimulated by the environmental changes and the internal organisational factors in a complex and iterative manner (Bandura 1977). According to this theory, team composition, managerial disposition, organisational structure and strategy have a profound impact on learning. Amabile (1996, 2004) and Edmondson et al. (2003) have identified leadership disposition, dynamic environments, and heterogeneous team compositions as key factors that influence learning.

From experimental studies, Amabile concluded that individuals choose easier options when subjected to pressures from management and attempt complex options, and engage in experimental learning when provided with management support. Edmondson from her

experimental studies concluded that teams tend to gravitate to transactional learning (single-loop learning) when the team leadership has a risk-averse disposition.

On the aspect of team composition promoting learning, several authors claim that dynamic team environments with heterogeneous team composition induce creative tensions resulting in transformational learning that leads to innovation (Amabile 2004; Florida 2004; Sethi et al. 2002). Extending these observations to a macro level, Florida (2004) observed transformational learning and innovative propensity to be high in regions like Silicon Valley (technology innovation) and San Francisco (artistic innovation) that have rich socio-cultural diversity.

From this segment of literature analysis, it emerges that learning and knowledge creation are intense social activities, the social dynamics of which are strongly impacted by collective dispositions and actions. A naïve conclusion one could reach from this would be that innovation is a highly replicable phenomenon and could be recreated by bringing the right factors to play. However, mere replication of processes and knowledge alone does not ensure innovation as it is apparent from the failure of TPS at NUMI, the joint venture plant between Toyota and General Motors. The broader and composite leadership practices that successfully led the innovation in Toyota plants - and its attendant culture - could not be replicated in NUMI (Liker 2003). Ichijo & Nonaka (2007, pp.3-10) attribute such failures to the differences in the practices the respective firms adopted in creating knowledge. In a way, Ichijo & Nonaka are implying that '*how done*[3]' aspects are more important than '*what done*' aspects.

For this research, I decided to explore the 'how done' aspects of leadership practices and set about understanding and exploring the practice perspective; in particular, how the structure of social practices influences action and is itself influenced by action (Schatzki 1987). Since the 1980s, practice theory has been increasingly used to explain 'how done' aspects of strategy and leadership. However, it is only recently that attempts are being made to apply it

[3] The term 'how-done' is not be confused with process steps, as it will be explained in section 2.4.2. In practice theory, it relates to adaptive and in situ coping actions. The term 'what done' more closely relates to process steps.

to innovation. For the purposes of this research, I decided to extrapolate the applications of practice theory in the strategy and leadership domains to the innovation domain, the details of which are presented in the following section.

2.4 Leadership Practices

Leadership is defined as a process whereby an individual influences a group of individuals to achieve a common goal (Rost 1991, p. 59). Burns (1978, p. 425) defines leadership more comprehensively:

> Leadership is the reciprocal process of mobilizing by persons with certain motives and values, various economic, political, and other resources, in a context of competition and conflict, in order to realize goals independently or mutually held by both leaders and followers.

In the context of this research, it is important to understand how leadership is practiced to mobilize the teams to be innovative. Therefore theories that discuss leadership in a behavioural and social interaction context are very pertinent. I will be employing the behavioural theories (Bandura 1982), transactional and transformational leadership (Bass 1985), authentic leadership (Avolio & Gardner 2005) and servant leadership (Greenleaf 1977; Stone et al. 2004) in analysing and interpreting my results. But, in my pursuit of understanding the leadership practices that promote innovation, I continued my literature exploration for leadership actions that were identified to be innovation stimulant. This line of investigation led me to the following findings:

- Providing a sense of psychological safety in teams that allows for well-intentioned interpersonal risks to be taken without the fear of material or reputation damage (Edmondson et al. 2001);
- Building individual skills, actively motivating the staff, switching to intrinsic rewards and eventually positioning tasks themselves as rewards, sustained support and creating an environment for the staff to pursue their tasks without unrealistic political pressures (Amabile 1996);

- Managing the composition, diversity and cohesiveness of the teams (Sethi et al. 2002);
- Exhibiting strategic intent and readiness to innovate (Glor 1997, 2000);
- Facilitation of a culture of trust (Peschel & Fundneider 2008) and
- Creation of an environment in which the politics of innovation are managed effectively (Dovey & Mooney 2012).

Such factors, being almost entirely driven by leadership intent and actions, could be termed as leadership practices. These practices have two aspects to them, namely *what to do* and *how to do*; and the aspect of *when to do* could be considered as a subset of how to do. *What to do* aspects are obvious and easily understood whilst *how to do* aspects are very subtle and needs carefully decoding. In the following excerpt from Dovey & Muller (2011, p.615) on facilitation of innovative environments, the type of activities to be performed (i.e. *what to do*) is enunciated. The activities outlined imply the richness of the *how and when to do* components.

> The task of leadership becomes one of the facilitation of an environment in which ideas that serve the interests of the stakeholder collective can flourish (Dovey 2009; Mumford et al. (2002).
>
> … To ensure the existence of these two conditions, the deep commitment of all participants to the broad mission of the collective is crucial; equally important is the establishment of a 'negotiated order' among stakeholders with respect to consensus on a set of principles upon which collaboration is to be based (Dougherty & Hardy 1996; Strauss 1978).

2.4.1 Non-Conventional Leadership Practices

Besides the aforesaid conventional leadership practices, non-conventional leadership practices are also observed to promote innovation. The creation of products and services of commercial value involves a political process wherein competent individuals or groups actively sponsor the innovation and mediate the power relations inherent in the social construction of its value. Referred to earlier as intrapreneurs, such people exhibit deep

commitment to the long-term interests of a collective and are dedicated to ensuring the realization of creative ideas in valuable innovative outcomes. According to Dovey (2009), it takes courageous and enlightened leadership to enable a collective to realize ideas that are perceived by powerful sectarian interests within that collective to threaten their power bases. Thus, this important leadership role is often performed 'below the radar' of senior management by self-appointed champions of ideas (intrapreneurs) who work covertly at considerable personal risk in order to ensure the realization of ideas that they view as critical to the future of the organisation (Pinchott 1985; Abetti 1997; Augsdorfer 2005).

Other forms on non-conventional leadership practices enabling innovation are the creation of *skunk works* or *underground work activities* (Abetti 1997) and *bootlegging* (Augsdorfer 2005). These activities fly under the radar without attracting organisational attention and use people to create a network of support (Gladwell 2000) to take innovative activities to fruition. The skunk works, bootlegging and intrapreneurism closely relate to practices such as the creation of enabling environments (Amabile 1996; Peschl & Fundneider 2008); getting the right people aboard (Collins 2001) and creating a network of champions (Malone 2009; Oliveria 2009).

The literature surveyed on leadership work practices has been able to explain *what to do* as a practice but the *how to do* aspects are not explained well. Perhaps the very practical nature of *what to do*, i.e. demonstrate practical wisdom or practical rationality makes it impossible to translate *what to do* into *how to do*. This gap appears to be the factor that impedes replicability of innovation. In an attempt to bridge this gap, I decided to investigate the coverage of the *how to do* aspects in the practice discourse on leadership and strategy.

2.4.2 Practice Theory

Practice is defined as *practical logic*; the demystification, deepening and understanding of nitty-gritty details of routine (Chia 2004, p. 29). Practice refers to the shared understandings, cultural rules, languages and procedures that guide and enable human activity. It accords equal importance to *what is done* and *how it is done.* Practice attempts to capture the *practical sense* by which life is actually lived in the moment (Bourdieu 1977).

Practice theory draws on existentialism in explaining how objects meld into relationships and achieve oneness by using the Heideggeranian concepts of *dwelling* (being in the relationship and being influenced by it) and *building* (influencing and altering the relationship while being in it). Practice theory puts relationality, action, interaction and habituation at the centre of social analysis. The outcome of a practice; be it strategy or leadership (or, in this case, innovation), is *immanent*: it remains *within* the actor and/or the situation. The outcomes arise out of each coping action the actors take; they come from internalised dispositions that orient actors in a particular way in their engagement with the world.

This notion of habituation or predisposition is termed as *habitus* by Bourdieu (1977); as *style* by Dreyfus; and as *dwelling* by Heidegger. Society's disciplinary practices inherently shape expectations and behaviour and incorporate social traditions and norms (habitus) unconsciously into ordinary human conduct. An example of this concept would be the socialisation of a child through the unconscious cultural practices enacted within the family and endorsed by the society (Chia & Holt 2006). Habitus is present at both individual and organisational levels (Chan 2003; Tatli 2010). The following management parable 'five monkeys – bananas – water hose' vividly explains how societal influences sculpt the habitus.

The experiment involved 5 monkeys, a cage, a banana, a ladder and, crucially, a water hose.

The 5 monkeys would be locked in a cage, after which a banana was hung from the ceiling with a ladder placed right underneath it.

Of course, immediately, one of the monkeys would race towards the ladder, intending to climb it and grab the banana. However, as soon as he would start to climb, the researcher would spray the monkey with ice-cold water. In addition, however, he would also spray the other four monkeys…

When a second monkey was about to climb the ladder, the researcher would, again, spray the monkey with ice-cold water, and apply the same treatment to its four fellow inmates; likewise for the third climber and, if they were particularly persistent, the fourth one. Then they would have learned their lesson: they were not going to climb the ladder again – banana or no banana.

The researcher would then replace one of the monkeys with a new one. As can be expected, the new monkey would spot the banana, think "why don't these idiots go get it?!" and start climbing the

ladder. Then, however, it got interesting: the other four monkeys, familiar with the cold-water treatment, would run towards the new monkey – and beat him up. The new monkey, unaware of the cold-water history, would get the message: no climbing up the ladder in this cage – banana or no banana.

The researcher would replace a second monkey with a new one, the events would repeat themselves – monkey runs towards the ladder; other monkeys beat him up; new monkey does not attempt to climb again – with one notable detail: the first new monkey, who had never received the cold-water treatment himself (and didn't know anything about it), would, with equal vigour and enthusiasm, join in the beating of the new monkey on the block.

When the researcher replaced a third monkey, the same thing happened; likewise for the fourth until, eventually, all the monkeys had been replaced and none of the ones in the cage had any experience or knowledge of the cold-water treatment.

Then, a new monkey was introduced into the cage. It ran toward the ladder only to get beaten up by the others. Yet, this monkey turned around and asked "why do you beat me up when I try to get the banana?" The other four monkeys stopped, looked at each other slightly puzzled and, finally, shrugged their shoulders: "Don't know. But that's the way we do things around here"… [Stephenson (1967) quoted from Vermeulen (2008)]

As Vermeulen (2008) comments, "…over the years, all firms develop routines, habits and practices, which we call the firm's 'organisational culture'. … These cultures can be remarkably different, in terms of what sort of behaviour they value and what they don't like to see, and what they punish. Always, these habits and conventions have been developed over the course of many years. Very often, nobody actually remembers why they were started in the first place. … Quite possibly, the guy with the water hose has long gone. Don't just beat up the new monkey – whether it is a new employee, a recent acquisition or a partner; their questioning of "the way we do things round here" may actually be quite a valid one".

Since the term professional practice is very common in business lexicon, a clear differentiation of professionalism and practice is useful at this juncture. Professionalism is about the application of general principles to problems. It is predicated on substantial factual

or declarative knowledge that is explicitly obtained through formal learning, and procedural knowledge which is both explicitly and tacitly (experientially) obtained. Professionalism is more about applying knowledge to solve defined problems whilst practice concerns reflection-in-action, where the individual is both guided by habitus and the learning gained from reflection-in-action. Practice involves framing the problem as well as attempting to solve the problem with a combination of factual, procedural and strategic knowledge[4.] Practice is about understanding an unclear situation; scoping the problem and repeatedly refining it; and solving it through *reflective – corrective* loops. In effect a practitioner builds into his/her routine ways of revising the prevailing habitus through continuous learning and knowledge accumulation. As a consequence of ongoing reflection-in-action, practice leads to *knowing-in-action* (Schön 1991). In other words a practitioner is able to be a part of the situation as well as stand apart from, and transform, it.

2.4.3 Using Practice Theory to Explain Innovation

The building blocks of practice epistemology are tacit knowledge, critical reflection and mastery, supported by mediated actions (facilitated or induced actions by keeping an open mind) and tentativeness i.e. being flexible and adaptive (Raelin 2007). The actions of the actors are tempered by intense social activities of negotiations and bargaining between different power groups. In acting, they *make do* with what they encounter in everyday life; negotiating the constraints handed down to them through a constant stream of heuristics, strategies and manoeuvres. The success of the mediated actions depends on the actor's *practical skills* (Whittington 1996) or *practical wisdom* (Nonaka et al. 2008) or *phronesis* in Aristotelian terms. As a practical application of this concept, Dougherty (1992) observed that, in a product development scenario, actions shaped by the intense relational dynamics of interactions with focus groups and customers, promoted product innovation.

[4]Strategic knowledge refers to the usually tacit knowledge base that underlies a competent person's ability to make use of other forms of knowledge, as well as heuristic, control and learning strategies, in order to solve problems and carry out difficult tasks (see Collins *et al.* 1989)

Practice, a constructionist phenomenon, places emphasis on relationships and in-situ coping and not competence which is essentially a positivist construct. Referring to leadership-as-practice, Carroll et al (2008) discount competency-based explanations of leadership as a method of operation. The knowledge generated from a practice perspective is abstract and tacit and does not lend itself to easy symbolic representation. Learning within a practice perspective is a lived experience; one learns from practice (action) and is not formally taught (Samara-Fredricks 2003).

As a constructionist concept, *practice* places primacy on relationality. In a practice scenario driven by relationality, interactions are habituated. An example of this is the legal practice of a novice serving *articleship* in law; or the medical practice of internship; or technical *apprenticeships* whereby knowledge is gained through experience. Similarly communities of practice, either sponsored or self-generated, operate with the intent of knowledge building (Brown & Dugid 1991; Nikols 2003; Wegner & Snyder 2000). The range and level of learning such apprentices gain is very dependent on their relationships with individuals and the organisation in which they undergo such 'cognitive apprenticeship'.

Practice theorists explaining strategy-as-practice signal the importance of different actors in different contexts as the raison d'être for strategy, in the words of Chia & Holt (2006, p.33):

'It (strategy) then curiously becomes a matter of style not content or substance'

Applying practice theory to innovation means gaining lived experience of innovation. It is learning by immersion in problem understanding and solving; observing and interacting with the actors to understand how actors facilitate innovation. In a practice context the goal becomes the journey. The identification of how innovation happens could be achieved by documenting the styles of different actors in different contexts; an approach similar to that taken by Chia (2004) and Chia & Holt (2006) in explaining strategy-as-practice.

2.5 Summary and Conclusion

Through this literature survey I was able to arrive at a definition of innovation for my research as innovation is the activity of putting creativity in service to economic returns. Exploring the

prevailing innovation theories led me to the realisation that innovation and knowledge creation are highly interrelated and feed off each other. The theories also identified several leadership / managerial contributions as paramount to the practice of innovation.

Further explorations on knowledge creation and learning led to the understanding that a dialectical relationship exists between innovation and knowledge creation and learning. Of particular interest to the research are the concepts of transformational learning, tacit knowledge and meta-learning (learning to learn) and the role played by leadership practices in their development. My developing understanding of learning and knowledge creation practices that underpin innovation, led to the exploration of the strategy-as-practice and leadership-as-practice literature. From this exploration I realised the importance of *in situ* coping and practical *know how*, and their relationship to the leadership practices that facilitate the transformation of cultural habits and orientations. I became aware of the contextual nature of such practices and the deep tacit knowledge embedded therein.

As I realised that innovation is a collectively constructed phenomenon that is context-specific and unable to be generalised, my methodological choices narrowed to those located in either an interpretivist or a constructionist research paradigm. I chose the latter with the view to engaging directly with the phenomenon through self-reflexive action or praxis, with action research as the methodology.

Through this review of the literature, it became clear that innovation is an intense social activity that occurs in a complex social theatre and that it should be explored *in situ* with an appropriate constructionist methodology.

In light of my improved understanding of the topic, I revised my research question to:

What is the impact of leadership practices on innovation in corporate projects?

CHAPTER 3 – RESEARCH METHODOLOGY

3 Research Methodology

This chapter documents the reasons for the choice of the research methodology of action research, and its associated methods for data collection and analysis.

3.1 Introduction

Finding a research methodology that can access the relevant data with the required rigour is a difficult and, at times, confusing process. This is especially true when embarking upon research concerning the complex social interactions found in organisations – research that would take me away from the 'scientific method' that I had previously taken for granted. Exacerbating my difficulties in conceptualising this research, was my educational and professional background: as an engineer by training and a practising software professional for three decades, the temptation to drift back to positivist assumptions and practices was ever-present as I attempted social research under paradigmatic assumptions that were foreign to me. When confused, my natural inclination was to revert to the familiar, but inappropriate, terrain of facts, hypotheses and proofs.

Under the guidance of my two research supervisors, I gradually came to recognise the subjectivist nature of the research question and the knowledge required to address it effectively. Initially, I attempted a phenomenological approach in order to access the knowledge of those who have experienced the phenomenon. I interviewed three senior leaders who drove innovation, respectively, in a vibrant young mobile carrier, a mature mobile carrier, and one of the largest software corporations in the world. Around the same time, through my literature review, I began to realise that the knowledge underpinning innovation in organisations was not the possession of an individual leader but was shared across stakeholders and often was contextually embedded. The literature review provided further insight into the concept of a practice: a body of knowledge that extends beyond individual volition and know-how - one that includes shared standards, norms, values and

aspirations. This concept opened up the collective - and inter-subjective - nature of the knowledge that seemed to underpin innovation in organisations.

The ensuing sections of this chapter describe the process through which the methodology for this research was selected and enacted.

3.2 Selecting the Methodology

According to Crotty (1998, p.2) there are four questions a researcher must ask in order to position and justify the approach or chosen methodology. They are;

- What methods are to be employed?
- What methodology governs the choice and use of methods?
- What theoretical perspective lies behind the methodology in question?
- What epistemology informs this theoretical perspective?

This line of questioning, however, omits one other decision and that is the choice of ontology (Burrell & Morgan 1979). Therefore a more complete set of questions would include a discussion of ontology which, in conjunction with epistemology, would assist in locating the research within a specific research paradigm. Based upon the recommendation of Burrell & Morgan (1979), Table 3.1 shows how I extended the process suggested by Crotty (1998) by commencing with the identification of the ontological and epistemological assumptions underpinning the research project.

Location of the Research within a Research Paradigm	The first task was to make explicit the ontological and epistemological assumptions underpinning the research: Ontology refers to the study of 'being' or existence and seeks to determine what entities can be said to 'exist' and the basis of such existence. Epistemology refers to the theory of knowledge assumed by the research and, thus, the nature of the knowledge sought through the research process. In conjunction, these two sets of assumptions determine the research paradigm (positivism, interpretivism, constructionism, etc.) in which the research should be located.

Theoretical Perspective	Depending on the nature of the ontological and epistemological assumptions, the choice of a research paradigm in which to locate the research leads to the identification of a theoretical framework to guide the research process. On the basis of the theoretical perspective, a specific methodology is selected – one in which there is no contradiction between the ontological and epistemological assumptions underpinning the research; the nature of the issue that the research intends to address; and the methods through which data are to be collected and analysed.
Methodology	The identification of the guiding theoretical perspective enables an appropriate strategic framework to be identified for the design and execution of the research agenda, and the theoretical justification of its prescription of particular methods with respect to the acquisition and analysis of the desired knowledge.
Research Methods	The final step is to identify the techniques or procedures to be used in the gathering and analysis of data related to the research topic.

Table 3-1 Process of Choice of Methodology and Research Methods

3.3 Ontology

This research concerns social constructs such as 'organisation', 'leadership' and 'innovation'. As social constructs, these intangible phenomena are purely conceptual and exist only in the minds of people. Although some aspects of these constructs may exist objectively – aspects such as buildings and technological artefacts – they only have meaning in the context of human interpretation and interests. Generally, these constructs 'exist' subjectively in the minds of people and depend for their 'realisation' upon their inter-subjective affirmation in everyday human discourse and action. They are, thus, inter-subjectively manifested and sustained as meaningful, sense-making, phenomena for only as long as they serve the practical and philosophical interests of the human community that created them. In order to engage in communicative and other forms of social action, these social constructs are given 'labels' or 'names' such as 'organisation', 'leadership practices', etc.

The social reality of this research can be said to have a nominal 'existence': it exists only inter-subjectively; is referenced by language and other forms of communication; and has no

ontology beyond human consciousness. Furthermore, such a social reality is assumed to have no regulative order but is chaotic in nature. It is a social reality characterised by conflict of interests and any semblance of order merely reflects the temporary dominance of one group of stakeholders over the others through material means or psychological phenomena such as hegemony, where those dominated internalise the interests of the dominant as their own interests, or reification, where the dominated 'forget' that the social reality is a humanly constructed one and assign to it a 'natural' and, thus, inevitable ontological status (Williams 1978; Gramsci 1971 ed.).

3.4 Epistemology

The word epistemology (from Greek επιστήμη - episteme, "knowledge" + logos) refers to a branch of philosophy concerned with the nature and scope of knowledge. Scottish philosopher James Frederick Ferrier (1808-1864) is thought to have coined the term in his book Institutes or Theory of Knowing and Being published in 1854. (Ferrier 1854, p.46). According to Crotty (1998, p. 8), the term is used to explain how we philosophically ground our knowledge and, 'how we know what we know'. In essence, it refers to our assumptions about the nature of the knowledge that the research is attempting to 'realise'.

This research is focused upon the social reality of a specific business organisation. In particular, it is concerned with the knowledge that informs the 'leadership practices' through which innovation may be realised within the organisation. Given the nominalist ontology outlined above, and the inter-subjective nature of the social constructs upon which this study is focused, such knowledge is assumed to be intangible and inter-subjective in nature. As such, its manifestation and utilisation is assumed to be a collective, in situ, achievement. Access to such knowledge is, thus, gained through participation, observation and probing inter-subjective encounters such as open-ended, depth interviews and other forms of searching discourse within the stakeholder community. It is assumed that only through the collective achievement of the thought-action dialectic (whereby theoretically-informed-action facilitates action-informed-theory in never ending spirals of action, reflection, and transformation) that the requisite knowledge can be acquired (or learning can be achieved).

3.5 Research Paradigm

On the basis of the ontological and epistemological assumptions outlined above, this research is located in the constructionist research paradigm. It adopts nominalist ontology in that it assumes that the social reality under research does not exist independently of human cognition and that, in order to structure our action within it, we use names, concepts and labels to negotiate the social constructs that we create.

Furthermore, it adopts a subjectivist epistemology by assuming that the knowledge sought is of a qualitative nature and can only be acquired through inter-subjective encounters with other human beings. Within this paradigm, it is assumed that 'knowledge is grounded in social and historical practices' (Orlikowski & Baroudi 1991, p. 20) and that 'knowing is a product of people coming together to share experiences' (Savin-Baden & Wimpenny 2007, p. 333) through 'co-authored relationships'.

Finally, it is assumed that there are no general laws or regularities governing social reality. Social reality is an intangible and unstable phenomenon, inter-subjectively constructed on the basis of competing social interests and values. It is essentially relativistic and can only be understood through actions that provide access to subjective frames of reference. Social reality is 'produced and reproduced by humans' and is 'constantly undergoing change' (Orlikowski & Baroudi 1991, p. 19) and social constructs like 'organisation' are created to satisfy the political and economic interests of those members with the most power. Unlike the positivists, constructionists do not regard the social world 'as if it was the world of natural phenomena, with universal laws that govern the reality that is being observed' (Boghossian 2001).

3.6 Theoretical Perspectives

By locating this research within the constructionist paradigm and given the research issue of identifying the leadership practices that facilitate innovative outcomes with respect to

organisational endeavour, the most appropriate theoretical perspective is that of critical social theory (Bohman 2008; Leonardo 2004). Some of the key tenets of this perspective are that:

- Social reality is the inter-subjective product of collective human volition and is thus evanescent;
- It is in a constant state of contestation as a consequence of competing stakeholder political interests;
- Those with the greatest power resources (material and/or psychological) will dominate any particular social reality for as long as those power resources remain greater (or are used more effectively) than those of competing interest groups;
- The knowledge that is required to transform social realities is acquired through praxis – the creation of a theory-practice dialectic whereby action is constantly informed by theory and theory is constantly informed by practice;
- Research is not a neutral, value-free, endeavour: irrespective of the research paradigm, the values and interests of the researcher will shape the research process in subtle ways. It is thus preferable for the researcher to declare these interests and values up-front. As critical theory espouses the political goal of social justice and human fulfilment, those researchers whose work falls within this theoretical perspective need to acknowledge the interests that are vested in, and drive the research process.

While this research shares many of the assumptions that underpin critical social theory, it cannot claim to be aligned with the historical political goals of this theoretical perspective. Unlike the broad social and political movements inspired by critical social theory, this research is focused upon the transformation of leadership practices within a business organisation. Its goal is to transform the culture of the organisation in such a way that the stakeholder community becomes capable of continuously producing innovative products, services and to learn about the nature of the leadership practices that facilitate this organisational capability.

In attempting this, it supports the central tenet of critical social theory that while social reality is historically constituted, it can be transformed through current human action. Furthermore, it endorses the claim from this perspective that an important objective of research is to overcome the constraints (material, cultural, psychological, etc.) to social change and recognises that these constraints are a consequence of historical and contextual factors whereby the hegemony of those who have dominated a particular social reality has come to be accepted as 'natural' and inevitable.

Thus, in order to transform the social reality of the organisation – in this case the leadership practices that constrain innovation – the researcher acknowledged that the participants would have to be 'conscientized[5]' (Freire 1974) in order to be empowered to participate in the construction and re-construction of the social realities that they inhabit. To do this, the alienation of people from their labour (a process whereby labour becomes a commodity rather than a source of emotional fulfilment) would have to be addressed by facilitating their creative engagement in everyday activities at the workplace. In this respect, this research is directly aligned with the perspective of critical social theory (Bohman 2008; Leonardo 2004) in its focus upon leadership practices that are shared rather than the prerogative of individuals with formal power in the organisation.

3.7 Methodology

Action research is the representative methodology of critical social research. Put simply, action research involves a group of people with a shared concern transforming a problematic situation through action, evaluating the consequences of such action, and learning from the process. This is empirical research as it is the same as performing an experiment.

[5] Conscientization or critical consciousness focuses on achieving an in-depth understanding of the world, allowing for the perception and exposure of perceived social and political contradictions. Critical consciousness also includes taking action against the oppressive elements in one's life that are illuminated by that understanding. In the context of my research, this will be used as a method of building self-awareness and self-worth to break from the inherent habitus.

Furthermore, this knowledge generation process must be open to public scrutiny so that the bases upon which decisions are made, and action formulated, are transparent within each spiral of action-reflection-learning. Gilmore et al. (1986, p. 161) describe action research as aiming to,

> *…contribute both to the practical concerns of people in an immediate problematic situation and to further the goals of social science simultaneously. … (T)here is a dual commitment in action research to study a system and concurrently to collaborate with members of the system in changing it in what is together regarded as a desirable direction. Accomplishing this twin goal requires the active collaboration of researcher and client, and thus it stresses the importance of co-learning as a primary aspect of the research process.*

In Action Research, the researcher goes "beyond mere studying and theorizing, to actively effect change in the phenomena being studied" (Orlikowski & Baroudi 1991, p. 21). This is achieved through praxis – a form of intervention in which theory and practice are constantly informing each other with the view to achieving the political goals of the research and, concurrently, generating new rich and relevant forms of knowledge.

The Action Research process outlined in Figure 3-1 and developed by Susman (1983) was adopted in this research. Susman distinguishes five phases to be conducted within each research cycle. Initially, a problem is identified and data is collected for a more detailed diagnosis. This is followed by a collective postulation of several possible solutions, from which a single plan of action emerges and is implemented. Data on the results of the intervention are collected and analyzed, and the findings are interpreted in light of how successful the action has been. At this point, the problem is re-assessed and the process begins another cycle. This process continues until the problem is resolved.

O'Brien (1998) identifies the following six factors as the key principles of Action Research.

a. Reflexive critique

The principle of reflective critique ensures people reflect on issues and processes and make explicit the interpretations, biases, assumptions and concerns upon which judgments are made. In this way, practical accounts can give rise to theoretical considerations.

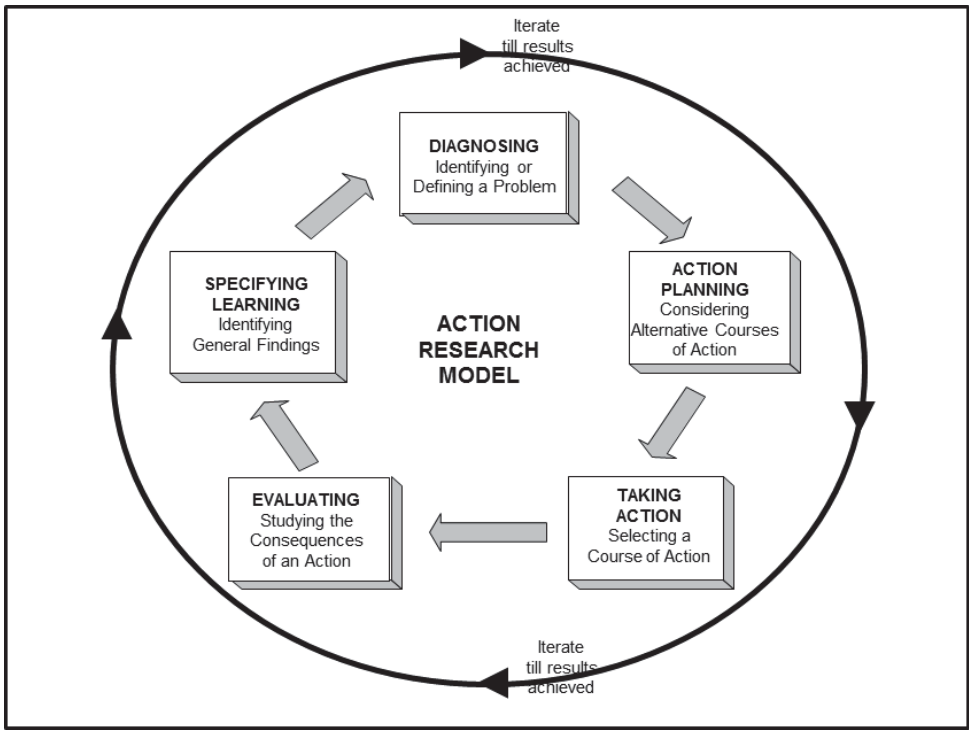

Figure 3-1 Detailed Action Research Model

(adapted from Susman 1983: pp 95-123)

b. Dialectical critique

Reality, particularly social reality, is consensually validated, which is to say it is shared through language. Phenomena are conceptualized in dialogue; therefore a dialectical critique is required to understand the set of relationships both between the phenomenon and its context, and between the elements constituting the phenomenon. The key elements to focus attention on are those constituent elements that are unstable, or in opposition to one another. These are the ones that are most likely to create changes.

c. Collaborative Resource

Participants in an action research project are co-researchers. The principle of collaborative resource presupposes that each person's ideas are equally significant as potential resources for creating interpretive categories of analysis, negotiated among the participants. It strives to avoid the skewing of credibility stemming from the prior status of an idea-holder. It especially makes possible the insights gleaned from noting the contradictions both between many viewpoints and within a single viewpoint

d. Risk

The change process potentially threatens all previously established ways of doing things, thus creating psychic fears among the practitioners. One of the more prominent fears comes from the risk to ego stemming from open discussion of one's interpretations, ideas, and judgments. Initiators of action research will use this principle to allay others' fears and invite participation by pointing out that they, too, will be subject to the same process, and that whatever the outcome, learning will take place.

e. Plural Structure

The nature of the research embodies a multiplicity of views, commentaries and critiques, leading to multiple possible actions and interpretations. This plural structure of inquiry requires a plural text for reporting. This means that there will be many accounts made explicit, with commentaries on their contradictions, and a range of options for action presented. A report, therefore, acts as a support for ongoing discussion among collaborators, rather than a final conclusion of fact.

f. Theory, Practice, Transformation

For action researchers, theory informs practice and practice refines theory in continuous transformation. In any setting, people's actions are based on implicitly held assumptions, theories and hypotheses, and with every observed result, theoretical knowledge is enhanced. The two are intertwined aspects of a single change process. It is up to the researchers to make explicit the theoretical justifications for the actions, and to question the bases of those justifications. The ensuing practical applications that follow are subjected to further analysis, in a transformative cycle that continuously alternates emphasis between theory and practice.

3.8 Research Methods

During the field work, I employed the following data collection methods: (a) research diary, (b) minutes of meetings, (c) (where permitted) voice recording and transcripts of meetings, (d) notes and diary noting of informal one-on-one meetings with key individuals and (e) quantitative evidence of outcome.

In order to improve the accuracy of interpretation and to minimise bias that I might have inadvertently introduced due to my active participation in the process, I decided to triangulate the data interpretation process by introducing 'open scrutiny' of the data. To achieve this I engaged one of my supervisors to conduct interviews with the key project participants in order to access their experience of the research project and to interpret the interviews from their perspective. The supervisor and I thus produced our own sets of interpretations from the interviews (from the transcript and voice recording of the interviews) and compared them for points of congruence and departure, and to take appropriate action on resolving differences in interpretation.

My role, however, also involved direct experience of the phenomena encountered through each of these projects and I attempted to capture this data through the keeping of a research diary in which insights were recorded daily. Furthermore, as a participant in the action, I was obliged at times to interpret data (whether in text, verbal and non-verbal form) in the moment and did not always have access to alternative interpretations or checks upon my own interpretation of such data, before I acted.

Hermeneutics was selected as the process for analysing and interpreting the collected data. Burrell & Morgan (1979, p. 235) describe hermeneutics as being 'concerned with interpreting and understanding the products of the human mind which characterise the social and cultural world'. Essentially, hermeneutics involves cultivating the ability to understand things from somebody else's point of view, and to appreciate the cultural and social forces that may have influenced their outlook. The data gathered in my study were constantly subjected to critical scrutiny and evaluation by my research supervisors, with the objective of making sense of each part in the context of the whole. As the understanding developed of what the data were communicating, more appropriate strategic action could be planned and executed. Due to its interpretive nature, hermeneutics cannot be applied in mechanical fashion. Instead a meta-principle known as the hermeneutic circle is utilised where the process of understanding moves from parts of a whole back to the whole in an iterative manner in order to develop a complex interpretation of the phenomenon under research (Myers 1997). This approach, thus,

enabled me to interpret the meaning of texts and other forms of data in terms of the assumptions and world-views that informed them.

Furthermore, the hermeneutic circle technique enabled me to attain an understanding of the dialectical relationship between the interpreted meanings of individual and group contexts, and their relevance to my research question of innovation at TNC. This helped me to gain a rich understanding of the research question and its constitutive phenomena (Crotty 1998) and to present my research findings in narrative fashion along with the identification of dominant themes of meaning in the data.

3.9 Research Design

My field work was carried out in TNC[6], a multinational corporation in high technology sector with a significant presence in Australia. TNC is one of the largest players in Asia Pacific in its sector. As the TNC employees were fatigued by recurrent organisational campaigns on new process, culture shifts etc.; they were very skeptical of any new initiatives. Therefore, despite the clearance I had from TNC to carry out this research, I took my CIO's permission to conduct the research without explicitly informing the participants that the data would be used for the purposes of my research. Neither did I disclose my goal of seeking to achieve an innovative outcome. However when the work was completed, I explained the teams as to how I used the data from the work for my research and my rationale of not telling them upfront, as it would have impacted their normal behavior and actions.

My rationale for choosing project environments to conduct the research is as follows. Projects are ad-hoc organisations created specifically to deliver an outcome which often has high visibility within the organisation. Project teams, though assembled on skill basis, tend to be a conglomerate of multiple smaller teams representing different stakeholder interests. Thus social dynamics within project environments tend to be political with a heady mix of individual and departmental habitus; managing of which is vital for achieving the desired

[6] The code name TNC is used throughout this report to preserve the identity of the actual corporation.

outcomes. Since the expected outcome is defined and the local leadership has significant influence in the composition of the team, managing the habitus and provisioning a localised innovative environment is an achievable task for the local leadership. On the other hand, in process environments (regular departments) where status quo is the norm provisioning localised innovative environment becomes harder. This is why organisations tend to position transformation initiatives as series of projects.

I chose three regular corporate projects DAM, CBOY and IHC for the study. DAM was a typical multi-million corporate project on which I was assigned as an emissary of the Chief Information Officer to smoothen the interworking between IT and other stakeholders. I had no direct delivery responsibility in this project. CBOY had a potential to be a million dollars plus project. It was my department's project on which my department and I had sound knowledge. IHC was a project foisted upon my department by senior management, on which my department and I had limited knowledge. In the DAM project, leadership practices could only be administered indirectly through influencing the project leadership. In the CBOY project, the leadership practices could be directly administered and the leader and the team had the benefit of strong subject matter expertise on the problem. In the IHC project whilst I was able to administer leadership practices directly, neither my team nor I had any expertise on the problem domain. These three projects were specifically chosen for the variations they provide in the study of leadership practices in innovation.

Though this research is conducted in a project environment, the findings may be applicable to activities in other domains as the findings were about leadership practices that create an environment conducive for innovation. However this may have to be validated through subsequent researches.

In each of these projects I followed Susman's (1983) action research model, as outlined in Figure 3.1. However, when engaging in 'insider mechanistic action research' (Coughlan 2003; Coughlan & Brannick 2007) I had to drive the action research spirals without honoring the democratic processes advocated by traditional action research theory (Reason & Bradbury 2001). These were substituted with discussions as a part of project status meetings. In this way I ensured that the new knowledge, pertinent to this research on the everyday leadership practices that underpin innovation in TNC, was co-constructed.

The fieldwork was designed as multiple case studies with action research (AR) applied in each case scenario. The fieldwork consciously chose the path of multiple-case studies as they are effective in identifying consistent patterns of behaviour and to uncover new and/or divergent themes (Zach 2006). As case study research and action research deals with context-bound knowledge, the two methods are mutually complementary in exploring context-bound knowledge. A case study represents a passive study of the researcher's interest in a particular set of phenomena; whereas action research is a participatory phenomenon characterised by direct intervention with respect to practitioner-perceived problems or questions within a particular context (Argyris & Schon 1991). Whilst a case study attempts to generalise the findings, action research lets the readers judge the relevance of the findings to their specific practice situation (Meyer 2000, p. 8).

3.9.1 Investigation Focus

The aim of the research is to study the leadership practices that create a social environment or culture within a project team that aids knowledge creation. Therefore the field work was designed to focus on team behaviour, managerial behaviour and knowledge creation within the project. As the stances of key individuals within the team influences the overall team's disposition, the disposition of such individuals within the team were also planned to be studied along with the team's behaviour (the phenomenon behind this influence is explained in the following page). Table 3-2 documents the planned investigational focus of the action research for the fieldwork.

Observed Factor	Aspects of observation
Team Behaviour	Group's collective belief and disposition (habitus) Dispositions of individuals / key personnel (Methodological Individualism[7] (Heath 2005; Hodgson 2007).

[7]The following excerpts from http://plato.stanford.edu/entries/methodological-individualism/ vividly explain the concept of methodological individualism.
"In *Economy and Society*, Weber articulates the central precept of methodological individualism in the following way: When discussing social phenomena, we often talk about various "social collectivities, such as states, associations, business corporations, foundations, as if they were individual persons"(Weber 1968, 13). Thus we talk about them having plans, performing actions, suffering losses, and so forth. The doctrine of methodological individualism does not take issue with these ordinary ways of speaking, it merely stipulates that "in sociological work these collectivities must be treated as solely the resultants and modes of organization of the particular acts of individual persons, since these alone can be treated as agents in a course of subjectively understandable action"……..
Methodological Individualism amounts to the claim that social phenomena must be explained by showing how they result from individual actions, which in turn must be explained through reference to the intentional states that motivate the individual actors. It involves, in other

	Intent on understanding the problem (encountering uncomfortable truths) – Gensi Gebutsu (Liker 2003).
Managerial Behaviour	Promotion of psychological safety – allow teams to fail without blame (Edmondson et.al. 2001, 2003).Provision of support – shield from unrealistic pressures and promote flexibility to experiment (Amabile et.al. 1996; Amabile 1998). Turning task itself as an intrinsic reward (Amabile 1998).
Knowledge Creation	Types of Learning observed e.g. Single Loop, Double Loop, Deutro, Experiential Learning, Transactional, and Transformational (Argyris & Schon 1978) If and how the new knowledge was created (How holistic truth was handled, how tacit knowledge was recognized and handled and what was the new knowledge created). The innovativeness of the solution outcome.

Table 3-2 Investigation Focus

3.9.2 AR Design and Data Collection

For each project in the field work, I ran a diagnostic or familiarization phase to understand the background, the problems faced and the positions taken by different stakeholders. In this phase, I reviewed relevant project documentation, engaged stakeholders, managers and project staff through a mixture of formal and informal meetings. The information gathered was analysed and actions to influence leadership

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words, a commitment to the primacy of what Talcott Parsons would later call "the action frame of reference". .....
Thus methodological individualism is a slightly misleading term, since the goal is not to privilege the individual over the collective in social-scientific explanation, but rather to privilege the action-theoretic level of explanation. This privileging of the action-theoretic level is methodological because it is imposed by the structure of interpretive social science, where the goal is to provide an *understanding* of social phenomena. Actions can be understood in a way that other social phenomena cannot, precisely because they are motivated by intentional states. Yet only individuals possess intentional states, and so the methodological privileging of actions entails the methodological privileging of individuals. Thus the "individualism" in methodological individualism is more a by-product of its central theoretical commitment than a motivating factor. This is what defenders to the doctrine have tried to communicate, with greater or lesser degrees of success, by claiming that it is politically or ideologically neutral."

practices were identified. These actions were then reviewed with the research supervisors.

In the first spiral, it was decided that I (the researcher) would participate in all key activities and would observe the situation first-hand. Then, at an appropriate time, I would initiate the planned actions. The spiral would continue until a logical unit of activity was completed, such as a design finalised or the project moving on a different course. During the course of the spiral, I would maintain field work research diaries; gather key emails, minutes and documents; where feasible audio-record the workshop proceedings and transcribe them.

At the end of the spiral, a reflexive phase would commence. The data gathered would be reviewed for the impact of actions, and new actions designed for the next spiral. Each subsequent spiral would be followed with reflexive phases and new actions would be planned and introduced in the ensuing spiral. The spirals would conclude either when the project ended or the purpose of the project changed.

Once the project was completed, all the data and research findings would be documented and analysed, with conclusions drawn. The research supervisor[8] would conduct audio-recorded interviews with the key project participants to understand their perception of the turn of events and I would compare it with my documented interpretation. This step was introduced to validate the interpretations of the researcher and provide opportunities to remediate any researcher bias I might have introduced.

[8] Though I could have used other outside resources for this task, with the paucity of Action Research practitioners in UTS and Prof Dovey being an acknowledged leader in the AR field, I chose him as my external critic.

3.10 Conclusion

The nominalist ontological, and subjectivist epistemological, assumptions that underpin this research resulted in it being located within the *social constructionist* research paradigm. This led to it taking a *critical theory* perspective, and the choice of *action research* as the research methodology. A range of data collection and analytical tools were used in the services of learning and knowledge generation (see Figure 3.2).

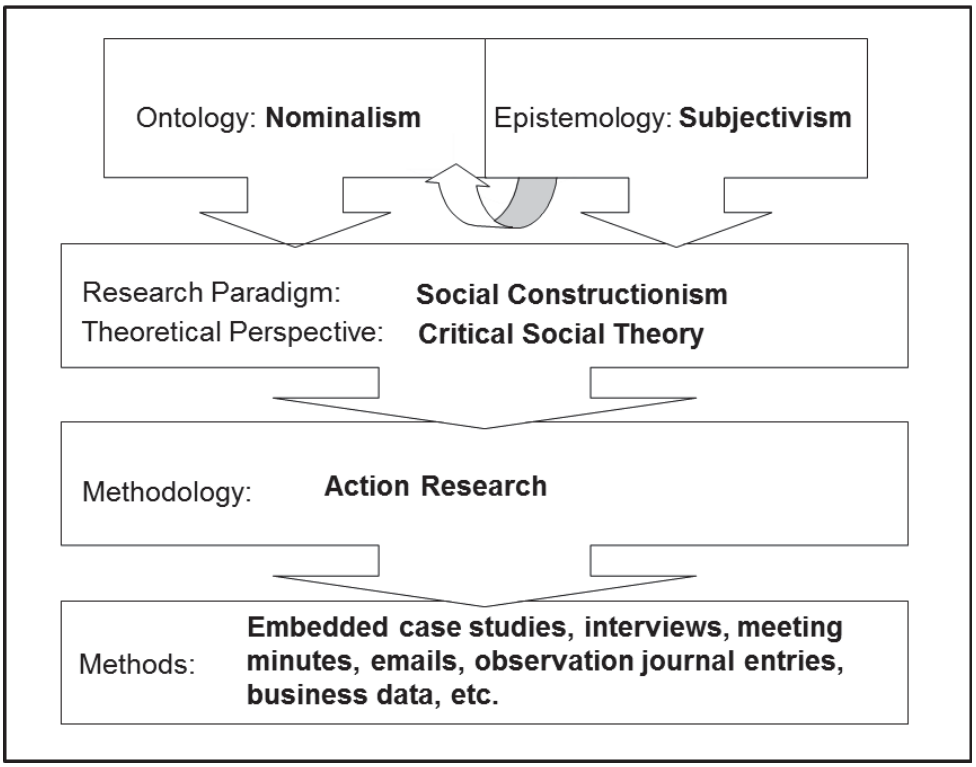

Figure 3-2 Relationship between basic research elements

(Adapted from Crotty, 1998:3)

CHAPTER 4 – FIELD WORK – DAM PROJECT

4 The DAM Project

This is the first of the three field work projects I conducted. This project provided rich insights into the reasons behind an organisation's failure to innovate in corporate projects.

4.1 Introduction

TNC, decided to launch a product (code named DAM) in Australia. Product development in the industry segment of TNC is a complex activity, where products are often built to stimulate new customer demand. All new products are built to accommodate fluid customer requirements, alter market dynamics, and leverage multiple sales and support channels. Thus any product development exercise in TNC is always a multi-million dollar gamble. Furthermore, building of a product requires intricate integration of several complex IT and engineering systems and the revamping of incumbent business processes; all of which require a combination of specialised technical and high quality managerial skills.

Usually, the launch of an intended new product will be preceded by a few precursor products that shape customer behaviour and influence their acceptance of the intended new product. The two precursor products to DAM were launched successfully by TNC in overseas markets but they failed to go live in Australia. As a consequence, TNC decided to develop and launch the DAM product in Australia by leveraging the knowledge that was gained from the successful launch of the precursor products at other TNC operations elsewhere in the world.

The DAM project had four principal stakeholders namely:

- The Marketing Group (MG) that specified the requirements of the product and was accountable for the financial success of the product. MG's success was measured on how the product tracked to the projected revenue streams;
- The Project House (PH) was the project managers of this initiative responsible for delivering the product for launch. This group, being closely associated with the day to day management of the project, were performing the function of 'the local leadership';

- The Engineering House (EH) was responsible for building and/or provisioning the product on the TNC's complex engineering infrastructure;
- The IT Group (IT) was responsible for building / provisioning the necessary IT components, as well as integrating them with engineering platforms to deliver a fully functional product. Once the product is launched, IT was accountable for the operational upkeep, support and service of the product.

The same set of stakeholders, together with the same set of project managers from each stakeholder group, had been engaged in the failed precursor projects to DAM in Australia.

4.2 Background

The DAM project was initiated in December, 2007. I (Siva) became actively associated with this project from 15 May 2008, when he was requested by his head office counterpart to facilitate the progress of a few aspects of the project. From this point Siva was included in the project core team; participated in all the core team meetings; reviewed the key project documents; and served as a go-to person between the different stakeholder teams. The very first meeting on 15 May 2008 - a ninety minutes teleconference with head office and stakeholder teams - laid bare the problem landscape:

> Questions were centring on interest areas of individuals instead of eliciting the complete picture of the problem.
>
> One of the requirements was to have customers' demographic data to customise the product to the customers' interests. The discussions on this point were limited to whether the data warehouse could serve customer demographic details in real time and the prowess of (or the lack of) the search-engine used in the data warehouse.
>
> The discussions gravitated towards administrative aspects (deadlines for funding submission, tender dates etc.), and the groups were keen to conclude that the project is excruciatingly complex and that IT was unhelpful.
>
> Research Diary 15 May 2008

Eight months into the task, after several missed deadlines and with little progress achieved, the first attempt at executing the DAM project had stalled. The conflict between the stakeholder

groups, especially between IT and the other groups had become very apparent. The Chief Information Officer (CIO), recognising Siva's good relationship with all the project stakeholder groups and his successful track record in facilitating stakeholder collaboration in complex projects, inserted Siva into the project as a mediator and emissary of the IT Management. Figure 4-1 represents the project structure and the key individuals and figures 4-2 the strength of relationships between the key groups.

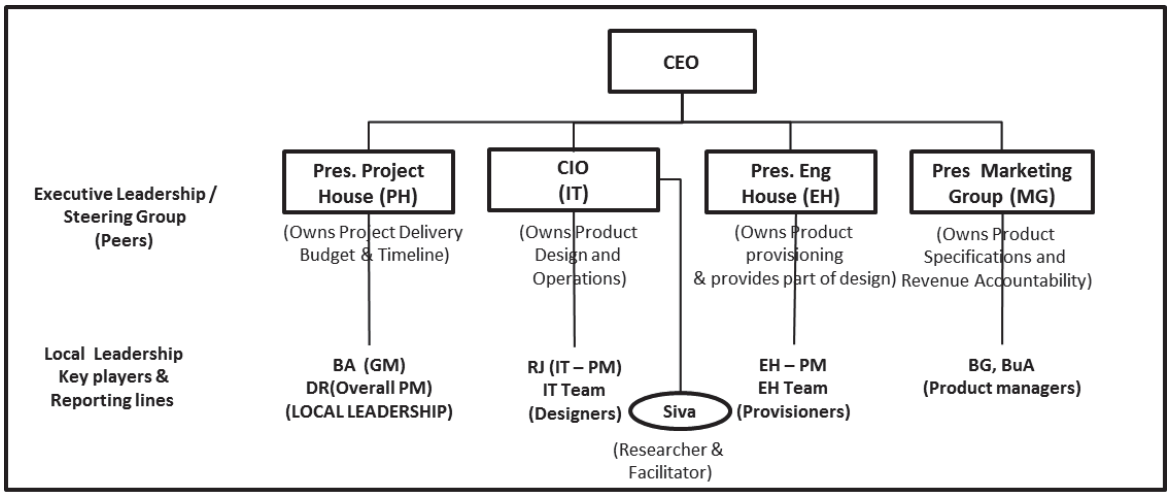

Figure 4-1 DAM Project Structure

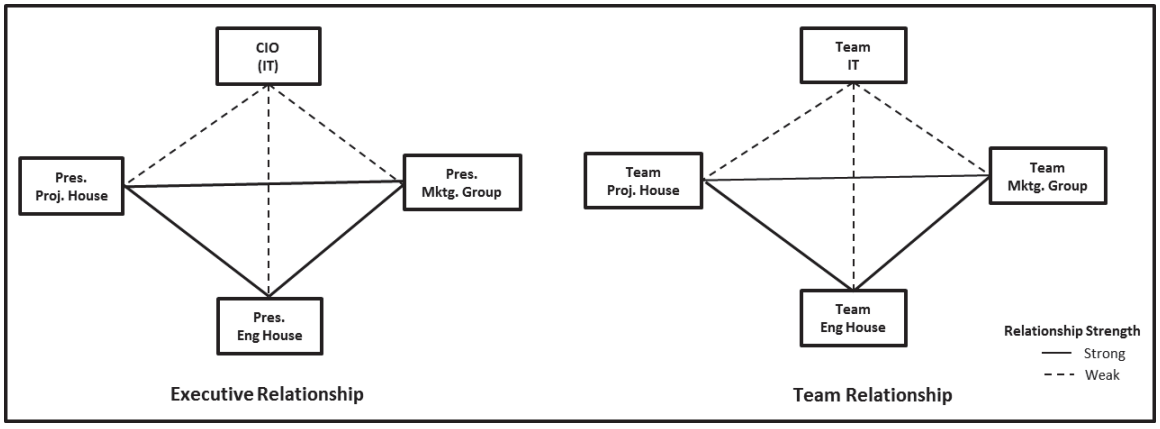

Figure 4-2 Relative Relationship Strengths

Siva, in his new capacity as IT emissary, decided to apply action research principles to promote innovation in the project. In this respect, Siva embarked on a diagnostics phase, studied relevant

project documentation, held in-depth discussions with all stakeholder groups and arrived at the following assessment of the situation:

- MG and PH were of the opinion that IT were inflating their costs and were combative and intransigent in their attitude towards the other stakeholders in the project. Furthermore, they blamed IT for the failure of the two precursor projects. The matter came to a boil when an IT GM made an off the cuff remark that he was not aware of the DAM project, whereas his staff were actively engaged in the DAM project and charging the project. This was picked up by PH and used to slam IT.

  Research Diary 19 May and 2 Sep 2008

- MG and PH were pushing for the exclusion of IT from the project and leveraging EH capabilities instead.

  Research Diary 2 Sep 2008

- IT was opposed to the project using EH capabilities to launch the product as it would hamper scalability and supportability of the product in the longer term.
- Silo mentalities, manifesting in destructive 'blame games', were evident in the failure of the stakeholder groups to collaborate and reach consensus on an appropriate course of action. In particular, there was a high degree of mistrust between the groups and individuals, with the distrust of IT by the other stakeholder groups being particularly strong. In this respect, the GM of PH told Siva in one of their informal meetings, "*I do not trust IT and I do not trust the IT project manager; he is out to get us*." Furthermore, the project manager from PH, who was in-charge of product delivery, told Siva in another informal meeting , "*I do not trust the IT project manager, he is a contractor and he is providing a high cost estimates to get $X million allocated to his project that will ensure two more years of his stay.*" This mutual mistrust appeared to have resulted from, or have been exacerbated by, the failure of the two precursor projects.
- TNC executive leadership had failed to communicate the commercial importance of the project to all the stakeholders. What communication there had been from

executive management about the project had been limited to the leadership of MG and PH.

- The project had a porous requirements document that gave a rough high-level vision of the product without any use cases detailing the behaviour of the product under different scenarios, both from customer and TNC perspectives. MG, who specified the requirements, was neither clear on how the final product would be used by the customers nor how it would be commercially supported by TNC. This lacuna led to each of the stakeholder groups creating their own interpretation of the product.
- A defensive *false consensus* communicative pattern could be detected at the project meetings where communication between the stakeholder groups was polite but inauthentic.
- PH, the project management group, was distant and disengaged. Instead of fixing the underlying issues of unclear understanding and consequential unclear solutions, they let these problems fester leading to complete breakdown of team dynamics. In the absence of authentic engagement with each other on these problems, each group subsequently focused only on the components that fell within their own jurisdiction. The failure of groups to collaborate with each other inhibited the generation of creative ideas and the exploration of innovative solutions to the challenges the project posed.
- As a consequence of this situation, the stakeholder groups began to be reliant on explicit instructions from PH and MG on design options; a capability Siva could clearly see that PH and MG did not possess. Furthermore, each stakeholder group insured itself against potential risks by padding the cost estimates of their components, thus escalating the overall project cost to untenable levels.

The leaders of PH seemed intent on scapegoating IT for the exorbitant project costs, and avoided addressing the cost drivers, or facilitating shared commitment to finding a solution. The leadership behaviour of PH prevented the development of an end-to-end view of the product by all stakeholders. The situation was further exacerbated by MG wanting all their requirements to be met up-front, rather than entertaining a staged roll-out of the requirements, and being

intolerant towards broader discussion of alternatives. As a consequence of the untenable demands by MG, and the failure of executive and local leadership to achieve stakeholder collaboration within the project, individuals began to exhibit passive resistance to the project routines by distancing themselves from project decisions; withdrawing from participation in project meetings; and disowning any responsibility for project outcomes.

Table 4-1 summarises the findings of the diagnostics phase.

Focus Area	Key Factors	Observation
Team Behaviour	Habitus – Collective belief and disposition	The groups were keen to insulate themselves from failure by not doing anything. Individually and collectively the teams did not want to deliver anything.
	Methodological Individualism – Disposition of key personnel	MG's focus was on the revenue from the product and not on the customer value it would provide. The executive leadership was so distant it was not clear if they really understood or cared about the product. Leaders of each stakeholder group were silently hoping the project would be cancelled and the blame could be shifted to other groups.
	Cohesiveness of Purpose – assimilation of diverse opinions to foster common purpose for the task	Totally absent. The individual groups were interested in protecting themselves from the fall-out of a failure.
	Intent on knowing the problems (confronting uncomfortable truths)	Totally absent. No attempt was made to understand the problem despite Siva's prodding (see Research Diary May 15)
Managerial Behaviour	Allowing teams to operate in a 'blame-free' environment	Did not happen; on the contrary each group was very risk averse and the IT group in particular was afraid of being scapegoated.
	Providing support – teams shielded from unrealistic pressures	Did not happen. Unrealistic pressures were put on the groups.

		Administrative pressures took precedence over fundamental need to understand and propose solutions.
	Positioning task as reward – appealing to the intrinsic motivation of the professionals to engage in problem solving as an expression of professional competence.	Did not happen. Task was actively avoided by the local leaders of the groups as they feared being scapegoated.
Knowledge Creation	Learning observed	None
	Knowledge created	None
	Innovativeness of outcome	No outcome to evaluate

Table 4-1 Diagnostic Phase – Summary of Findings

4.3 Framing Actions

Analysing the project situation against innovation frameworks, Siva targeted team and leadership practices with a view to create a functioning team environment to launch into promoting learning and knowledge creation. Table 4-2 provides the summary of actions planned for the first spiral of action.

Focus Area	Key Factors	Actions Planned
Team Behaviour	Habitus – Collective belief and disposition	Promote Trust Use collaborative solution design exercise as a vehicle to promote collaboration and reduce distrust between teams. In meetings / workshops use facilitations techniques and float open ended questions to increase participation and promote inclusive discussions amongst teams to break barriers and induce basic 'operational trust'.
	Methodological Individualism – Disposition of key personnel	

		Position Siva who has good relationship and commands trust with all the parties as a 'go-between' and 'trust – guarantor' to reduce distrust and promote healthy interactions between the warring parties.
	Cohesiveness of Purpose – assimilation of diverse opinions to foster common purpose for the task	Promote Shared Purpose & Break Silo Behaviours Make executive leadership to reiterate the importance of the project to the teams (engage IT leadership for achieving this). Shift the team's focus on the problem (developing solution to deliver the product). Facilitate solution workshops with all the stakeholder groups to collaboratively develop an end to end solution of the product.
	Intent on knowing the problems (confronting uncomfortable truths)	
Managerial Behaviour	Allowing teams to operate in a 'blame-free' environment	Improve Work Practices of the Local Leadership Since Siva did not have the power base or mandate to change the behaviour of the local leadership, the following refined influencing techniques were adopted. Siva will engage in subtle coaching of the local leadership with respect to positive leadership practices around communication (especially listening and questioning practices), inclusivity of approach, affirmation and recognition of all stakeholder groups, the encouragement of ideas and other forms of voluntary contribution from individuals to the identification of solutions, and greater tolerance of risk within the project. As a part of the coaching routine, before and after every major meeting or workshop Siva will engage the local leadership in a preparatory and a review meeting respectively, in an informal setting such as a coffee-shop.
	Providing support – shield from unrealistic pressures	
	Positioning task as reward – appealing to the inner self of the professionals to engage in problem solving as an expression of professional competence.	

Knowledge Creation	Learning observed	To be observed in-situ.
	Knowledge created	
	Innovativeness of outcome	

Table 4-2 Formulated Actions for Spiral 1

4.4 The First Spiral of Action

The first spiral took place between 01 Sep 08 and 10 Sep 08. During this period, all the planned actions were administered, and the effects studied, documented and detailed below. Table 4-3 provides the summary of the actions and outcome.

Focus Area	Actions	Outcome
Promote Trust	Talk with individual stakeholder groups to reduce distrust and promote healthy interactions between the stakeholder groups.	Attempts to get the stakeholders to suspend their distrust and renew project action with a fresh perspective failed. Whilst the stakeholders were polite and agreed to try it out, it turned out to be mere lip service, the relational distrust between groups was too strong to be changed.
	Call joint solution workshops to develop collaboration and promote trust.	Attempts to hold a common design workshop resulted in IT and Networks having their own separate workshops. The two workshops were run at the same time in two adjacent rooms without the other group's participation. An attempt to facilitate a collective meeting to discuss design was ignored.
	Promote operational trust among the groups through facilitation techniques and open-ended questioning during meetings and workshops	Since there were no workshops involving multiple stakeholder groups, this practice only achieved limited success at the IT group workshop.

Promote Shared Purpose & Break Silo Behaviours	Using the CIO as a channel to influence the executive TNC leadership to reiterate the importance of the project to the groups ; Through personal persuasion, shift the focus of the groups to the problem (solution to delivering the final product); Facilitate solution workshops with all the stakeholder groups to collaboratively develop an end-to-end solution of the product.	The executive leadership did not communicate directly to a joint meeting of all groups; instead they chose to communicate to each group through their respective leadership. This had little-to-no effect on project progression. Attempts to get the stakeholders to focus on the problem by posing open-ended questions resulted in evasive tactics from them and the early termination of these attempts.
Improve Local Leadership Practices	Engage in subtle coaching of the local leadership on positive leadership practices.	Actions did not yield the expected results.

Table 4-3 Actions & Outcome for Spiral 1

4.4.1 Promote Trust

Siva met individually with the leadership of PH, MG and IT to understand the basis of the mistrust between the groups. He listened to their misgivings about the other groups and, without offending them, encouraged them to empathise with each of these groups by viewing the situation from their perspective too. During these meetings, Siva suggested that a focus on the common goal of delivering a commercially successful product could mitigate the problems. At the end of each meeting, he negotiated with the respective stakeholder group leader to suspend distrust of other groups and to renew project action with a fresh perspective on the situation.

Soon after these meetings, Siva participated in a workshop convened by IT to develop the design for the product. Expecting to see members of the other stakeholder groups there, especially representatives from the key stakeholders EH (with whose platforms and infrastructure IT solutions would be integrating), he was surprised to see only members of the IT group present.

However, at the tea break, he noticed that, in a room adjacent to that in which the IT workshop was occurring, EH was holding its own workshop for developing the design for the product - without IT participation. Ironically, the members of these two groups greeted each other during the breaks but then retreated into their respective rooms to develop the design without any collaboration from other groups.

The IT workshop was attended by twelve IT professionals. The requirement document was dissected and derided but no attempt was made to call MG to get clarifications. One of the lead designers picked up the requirement statement that ended up with 'etc.' and sarcastically declared that systems could not be designed for open-ended requirements. Furthermore, the professionals around the table identified several areas that required combined design efforts with EH and in each area they made assumptions about EH integration. In addition, the design was not done to a level of technical completion but only to the extent of identifying the areas of work. Estimations were very generous in order to compensate for lack of understanding. Similarly, whenever a participant identified a risk, no attempt was made to quantify and mitigate that risk - instead the estimates were raised. Siva's suggestion that the group focus on a full design before jumping to cost-estimates was rejected outright. The IT project manager was forthright: his words were, "*Don't trust them, Siva. They won't tell you the requirements and if the product does not work properly they will nail IT. They are out to get IT*. (Research Diary Sep 10 2008)"

In parallel, EH came with its own design and with its own estimates. Upon probing by Siva, they conceded that these had been derived in the same fashion as that of IT and that their design was only suitable for a pilot launch and not for a full-scale deployment to a broad customer base. However, EH never disclosed this piece of information in any of the forums even under probing questions from Siva.

The actions required to bring about mutual trust were becoming onerous activities. The outcome from this suite of actions turned Siva into a mediator between groups brokering deals but, as the trust never developed between them, this action failed to deliver any positive outcome.

4.4.2 Promote Shared Purpose and Break Silo Behaviour

This action was facilitated by the CIO. At a project steering meeting, the CIO requested the other leaders (stakeholders) to communicate to their teams of the collective executive leadership's commitment to the product. This resulted in an informal verbal briefing to select managers. Thus the communication did not alter the team behaviour and every group appeared to be bracing for the abandonment of the project as doubt grew about the seriousness of intent of the TNC executive leadership.

The inability of Siva to get TNC's executive leadership to communicate directly to all stakeholder groups meant that this strategy was unlikely to be effective. The planned action of calling a solution workshop with all the groups did not eventuate due to lack of support from the local leadership.

The silo behaviour continued to undermine Siva's strategic interventions. For example, during the IT design workshop, the question posed by Siva in seeking a description of different aspects of the solution, was addressed reasonably well because Siva was recognised by the group as an 'insider' – someone who was part of IT and who enjoyed a strong powerbase within the group. On the contrary during the discussions with PH and MG, in response to Siva seeking ideas about the product and inviting thoughts on different roll-out strategies, members of those groups remained silent or gave evasive responses, with the meetings coming to an end at such junctures. As an 'outsider', Siva was under suspicion. The strategy of Siva in attempting to transform mental models and defensive factional behaviour, induced by silo membership over a significant period of time, was clearly inadequate for the task.

4.4.3 Alter Local Leadership Practices

In parallel with the above actions, Siva attempted to influence the local leadership to alter their everyday work practices to facilitate greater collaboration and support among the stakeholder groups. In order to execute this strategy, Siva held several formal and informal meetings with PH and tried to facilitate an alternative perspective on the motives of IT and better understanding of specific individuals within IT. He explained the rationale behind some of the positions taken by IT, such as their need for expensive data warehouse interfaces. These meetings appeared to soften

the stance of PH with respect to IT and led them to seek explanations on several points. Siva emphasised the importance of effective listening and the asking of open-ended questions in order to understand a group's perspective before reacting to it. However, whatever change may have been achieved by Siva through these meetings was not apparent in group workshops where distrust and adversarial behaviour was still the norm.

4.4.4 Application of Action Research Principles

AR Principles	Observations
Reflexive Critique Teams reflect on issues and processes; make the concerns, biases, assumptions and interpretations explicit.	DAM did not have a single cohesive team, but many individual teams. IT team alone was observed to engage in this process and articulate and justify their concerns and fears within their team. Other teams not only did not engage in this process within their team, they refused to countenance issues or concerns IT team was articulating. In the absence of team wide collective reflexive process, Siva tried to think for the 'unified team' and engage respective teams to see other's view. The attempt failed due to the entrenched political positions of the teams.
Dialectical Critique Team members engage in dialogue with each other to validate the reality in its context.	. This did not take place. Siva attempts to influence local leadership on this failed due to their entrenched positions.
Collaborative Resource Teams treat each persons' idea equally significantly and learn from contradictions; synthesising (Nonaka 2003) into a single view point.	This did not take place. Siva attempts to influence local leadership on this aspect failed as they were too entrenched in their positions.
Risk Challenge to status quo introduces risk of ego, fear of failures. These fears are allayed by local leadership and learning facilitated.	As above

Plural Structure Ability to maintain and document healthy ongoing discussions until final conclusions reached (provides for future reflections).	As above

Table 4-4 Application of AR Principles in Spiral 1

4.5 Learning from the First Spiral

4.5.1 Observation on Alignment to Theories

Theories	Observations
SECI – *Ba* (Nonaka 1994) shared context in motion	As the team was disjointed, the shared context or *Ba* was not present. However, within the IT group, this was present as the group had collective understanding of the problem and a shared vision of the solution.
Social Capital (Nahapeit & Ghoshal 1998): Network of relations and the assets mobilised by it.	As the teams were disjointed and no positive relations existed between groups, the social capital was not effective in the DAM project. Whilst the individual assets in the DAM project were very capable, they could not collectively forge into effective social capital.
Practice Theory Features Practical Skills (Whittington 1996) Practical Wisdom (Nonaka 1994) In situ coping (Raelin 2007)	These were not observed. The local leadership tried to execute the project in a strict Taylorian model ignoring the need for collaboration and co-learning.
Leadership Styles Leadership style varies in different contexts (Chia 2004)	No changes to leadership style observed. The local leadership was very detached and executive leadership appeared disengaged.
Cultural Transformation Critical social theory (Bohman 2008; Leonard 2004)	No cultural transformation or change observed. Teams were steeped into avoidance and bracing for project shut down.
Theory, Practice, Transformation: How practice and theory	As above.

recursively reform each other leading to transformation (Praxis).	
Shared Leadership	There was no sharing of vision or purpose between the different teams in DAM leading to a shared leadership construct.

Table 4-5 Alignment to Theories in Spiral 1

4.5.2 Absence of Trust

It quickly became apparent that the trust between the groups and, more specifically, among the leaders of these groups would not be facilitated by the enacted strategies of Siva in this regard. These strategies were no match for the embedded mental models and adversarial practices of each of the stakeholder groups. In particular, the local leadership's refusal to hold an all-hands workshop to discuss the solution was proof of the degree of distrust that still existed between the groups and a potential hidden agenda within the local leadership.

The only area where some change was detected was in the attitude of the team leadership of other groups towards IT. In appealing to their professionalism, Siva was able get the team leadership to use him (as a trusted source in IT) as a mediator in their negotiations with the IT group. However, within inter-group meetings, the team leadership reverted to an adversarial stance towards IT that was as rigid and negative as before. They were clearly not going to recognise IT in public.

Whilst this attempt at building trust was more difficult than imagined, Siva intended to leverage his apparent acceptance by the leadership of the other groups as a trusted go-between with IT, in the next AR spiral in an attempt to leverage this nascent softening of distrust.

4.5.3 Absence of Focus

Throughout this spiral and the period preceding it, there was a complete lack of visualisation of the project. The teams never talked about the final product with respect to how it would be used by the customers and what value it would bring to the customers. If at all any reference to the product was made, it was always about the potential loss of revenue due to a delayed launch

or the impact of the cost of building the product on the projected revenue streams. The PH and MG groups could not visualise the product but had a broad understanding of the impact of the cost and time escalations on the product's viability (business case). The EH and IT groups neither understood the product nor did they appreciate the business case and time implications. This lack of visualisation of the final product appeared to stem from a combination of cultural, structural and systemic factors; all of which led to a lack of focus in the project, details of which are provided below.

Firstly, there was a lack of communication about the purpose and status of the project from executive leadership. Their involvement in the everyday processes of the project was minimal and they were not inclined to work with the local leadership in understanding the project issues and taking steps to mitigate them. Greater involvement would have forced the executive leadership to address the underlying systemic complexities and constraints. Instead, they chose to 'lead by decree' and distance themselves from the political machinations that were undermining project delivery. As a consequence, the local leadership and the stakeholder groups followed their example and took a defensive and risk-averse stance whereby factional interests took precedence over TNC's interests. The 'detached' position of TNC's executive leadership from the project led to rampant interpretations at different levels of the project. Simple statements from local leadership like, '*we cannot run this project at this cost; the business case does not stack up*' which in a normal project would spur the team into collective action to revise the options, were misconstrued to be statements implying impending project abandonment. Every group privately told Siva that they strongly believed that the project would be abandoned. As a result, all groups seemed to have disengaged with the project and were simply going through the motions of its espoused routines.

Secondly, the functional hierarchical structure of TNC made genuine cross-functional collaboration near to impossible. Each stakeholder group within the project was fearful of the consequences of failure and addressed this fear through destructively competitive strategies whereby they attempted to shift all blame for failure onto other groups[9]. Sensing IT as the

[9] In 2010, after more of similar occurrences, TNC decided to do away with the discrete organisations EH, PH and IT. In order to gain unified delivery capability, TNC initiated a major reorganisation where PH, IT and parts of EH were merged together to create a product and technology organisation. In this process, the entire incumbent IT leadership was removed and replaced.

weakest member of the project community, making IT the scapegoat for any failures was an easy option. Another defensive routine in this respect was the inflation of estimates and the up-front demand for requirements in a context where requirements were emergent and to be derived from post-implementation market behaviour.

Thirdly, divergent success metrics were assigned to stakeholder groups that constrained the collaborative, consensual behaviour required for the development and launch of a successful and innovative product. MG was measured on the annual revenue the proposed product would generate and hence their revenue projections from the product were always aggressive. They always included revenue from all potential revenue streams in the market place to shore up their business case. For the product building organisations IT and EH, to deliver a product in a big-bang approach to cover all the revenue streams at the outset was not a feasible option. The fluid and emerging nature of the requirements and the complexity of system integration made building products incrementally, the only feasible strategy. MG would not agree to this approach as its success metrics would be impacted. PH was measured purely on delivering a project to agreed cost and time. They were not accountable for the success of the product. Consequently PH chose to play the role of simple project managers, delivering the solution to the requirements specified by MG by engaging other relevant organisations in the TNC. PH carefully avoided negotiating any solution alternatives and was content to push the line of MG. Such structural arrangements promoted defensive and blame shifting behaviours from all the groups.

Fourthly, although the individuals assigned by MG to manage product delivery were bright young professionals, they neither had the necessary experience nor the mental maturity needed in a complex product development situation. As evidenced in the transcripts of workshops in the next spiral, the MG professionals were found to be lacking full understanding of the product they were planning as they were unable to answer even simple questions like, '*give me a use case of how customer care would be provided*' or *'give me a use case on how a customer would use the product'*. In one instance the MG professional broke down screaming, *'they are killing me'*. The MG professionals were more inclined to pressure the divisions to meet their requirements than willing to recognise the underlying systemic limitations or the fluidity of the requirements. They neither understood the complexity of system integration nor could they trust the facts as

presented. Only when external vendors with the necessary experience were brought in - who MG trusted more than they trusted IT - did the situation alter.

The issue of stakeholder collaboration and shared focus turned out to be more formidable than Siva had anticipated. In the absence of TNC executive leadership involvement, and given the structural and cultural constraints to innovation in TNC as well as Siva's very limited powerbase within the company, it seems unlikely that any strategies that Siva could formulate would be able to transform the functional and sectarian politics of the project environment.

4.5.4 Poor Leadership Practices

The practices of the executive and local leadership did not include any attempt to understand the problems that the groups were experiencing within the project. Furthermore, there appeared to be no intention, whatsoever, of generating ideas and facilitating solutions (let alone innovative solutions) to these problems.

The power relations that the local leadership enjoyed with the executive leadership made them insensitive to their destructive practices, such as the cavalier manner in which they dismissed IT, a key stakeholder. In this respect, the PH leader informally commented to Siva that his attitude towards IT was similar to that of the executive leadership; thereby implying that PH was just mirroring the attitudes of the executive leadership. Thus the attitude of the executive leadership was exacerbating tensions that already existed between the groups as a consequence of the previously failed projects. Furthermore, the competitive power relations between groups prevented learning occurring across the project. Despite a healthy mix of diverse talent in each group, there was little-to-no collaboration and/or knowledge sharing across groups. Without a shared vision and the encouragement of collaborative practices, project members were left to flounder in a defensive, risk-averse social environment.

All the groups appeared to be playing a waiting game in anticipation of the project being disbanded. As such, local leadership did not recognize the missing competence within the project, or notice that MG was neither defining nor articulating the product in sufficient detail to win the confidence of the other groups. This glaring skill weakness was not addressed.

4.6 Re-strategising for the Second Spiral

The lessons learnt from the first spiral of action can be grouped as follows:

- Structural limitations – The structure of the organisation (functional hierarchy) encouraged groups to focus on functional priorities and interests at the expense of the company's interests. This problem was exacerbated by the formal metrics by which the performance of each group was measured, and by the hierarchical power relations that prevailed within the company.
- Narrow Focus – Obsessive focus on cost as opposed to the development of a commercially viable solution, led to the neglect of teamwork and the absence of any ideation. Rather, it introduced untenable and unnecessary pressures on the groups that stifled their creativity.
- Cultural limitations – The competitive and adversarial cultural politics encouraged by the structure of the organisation effectively prevented the collaborative and mission-focused behaviours required for the success of this project. The notion of 'leadership' within the cultural context of TNC was the antithesis of what was required to deliver the project successfully.

These problems were deep-rooted and have a long history within the organisation. As such, they posed a significant challenge to the formulation of new strategies for the second spiral of IAR. Details of the actions planned for the second spiral are as follows:

4.6.1 Addressing Structural Limitations

It was beyond the power of Siva to address these limitations effectively. The structure was not going to be changed and neither were the divergent success metrics for stakeholder groups. Siva's only option, thus, was to identify and promote the common success measure which was that of delivering the project successfully. He aimed to do this by sustained communication of this shared success factor and by appealing to the professional responsibility of the project stakeholders to start viewing the task on hand as a worthwhile challenge. Furthermore, he decided to launch another attempt at getting TNC's executive leadership to engage with the

project through regular and direct communication of its commercial importance at 'all-hands' meetings of the stakeholder groups.

4.6.2 Addressing Narrow Focus

To address the limitations of narrow focus, the set of actions proposed in spiral one (to promote shared purpose and break silo behaviour) were warranted. Having seen them fail in the first spiral due to structural limitations (discussed earlier), Siva decided to appeal once more to the executive leadership to repeatedly articulate TNC's aspirations for the project, and spur the groups on to engage in the requisite activities for project success.

4.6.3 Addressing Cultural Limitations

Once again, an attempt would be made to modify local leadership behaviour by encouraging more cooperative and supportive practices through sustained communication with the leaders of each respective group. Siva's aim was to achieve small 'quick wins' that would encourage this leadership to reflect more critically on its cultural practices.

In summary, the planned actions for the second spiral of AR were:

- Encourage direct communication from TNC's executive leadership at regular 'all-hands' meetings of project stakeholder groups to reiterate their commitment to, and the commercial importance of, the project.
- Mitigate silo-instigated behaviour by facilitating local leadership's focus on a solution rather than on cost, and by appealing to the professional ethics of all stakeholder groups.
- Encourage the holding of regular 'all-hands' meetings across stakeholder groups in order to facilitate creative collaboration and ideation
- Influence the leadership practices of PH and MG in order to encourage greater stakeholder trust and authentic communication.

4.7 The Second Spiral of Action

The second spiral lasted for intense one week between 11 Sep 08 and 19 Sep 08. During this spiral all the planned actions were administered, the effects studied, documented and detailed below. Table 4-4 provides a summary of the actions and outcomes.

Focus Area	Actions	Outcome
Reinforce Project Goal & Create Shared Purpose	Form a task force to drive a 'solution focus' and foster a common purpose across the groups.	Task force formulation and its initial interactions were a qualified success. Though the taskforce appeared to lack the skills / maturity to bring about a solution focus to the project, they agreed to call a solution workshop.
	Conduct solution workshop	At the solution workshop, the taskforce members reneged on their promise to focus on solution options and reverted to their usual cost-focused parochial behaviours. It appeared that the taskforce and local leadership were displaying dual behaviour; one set of behaviours in the private discussions with Siva and another for the joint meetings.
	Conduct follow-up solution workshop (unplanned action initiated by Siva as a consequence of the failure of the first workshop).	This was a failure from the outset. IT was excluded from the workshop but Siva invited himself to the meeting. The discussions centred on how to eliminate IT from the project – Siva's urging to the contrary was ignored. Local leadership appeared to Siva to be behaving strangely (later confirmed to be behaving in alignment with executive leadership stance).
Improve Trust & Break Silo Behaviours	Appeal to the professionalism in each group and encourage them to focus on a solution instead of silo turf wars.	The actions failed and the situation remained unimproved.

Improve Local Leadership Practices	Subtle coaching of the local leadership for each major activity through preparatory and review meetings, respectively, in an informal setting such as a coffee-shop.	Actions did not yield the hoped-for results. However off-record the local leadership shared the rationale behind their stance (aligning themselves with the stance of their executive leadership).

Table 4-6 Actions & Outcome for Spiral 2

4.7.1 Reinforce the Project Goal and Create Shared Purpose

Siva urged other stakeholders to reiterate to their respective groups, the executive leadership's commitment to the product and the commercial importance of the project to TNC. In response, the leader of the PH group formed a task force to drive product delivery. The taskforce comprised two senior managers from PH, a senior manager in-charge of DAM delivery, the project manager of DAM, and Siva.

In the first meeting of the task force, all except Siva were very critical of IT and its cost estimates. They urged other taskforce members to get rid of IT or close the project. Siva tried to defuse the tension with explanations for the high cost, and advised the group to consider understanding the rationale behind the submissions of IT and EH before taking radical decisions. Furthermore, he suggested that a solution workshop should be held to discuss the end-to-end solution and use the understanding gained from the workshop to drive the next set of delivery strategies. The task force agreed with this suggestion and called for a solution workshop with all the stakeholders with the express purpose of understanding the solution and not questioning the cost or dwelling on past issues.

4.7.1.1 The First Solution Workshop

The first workshop was attended by members of every stakeholder group and one senior manager from the taskforce. Siva was allowed to record the meeting. The transcript of the meeting is provided in Appendix 10.2.

At the workshop, the IT group were the last to arrive – during this period IT was derided by other participants. The DAM project manager opened the workshop with the following statement,

> *I just want to have some time to look at what is needed to **reduce the cost quite significantly** and, at the same time, build a viable product. Let us start with IT costs, what can be done differently……*

The highlighted phrase undid all the hard preparatory work done by Siva with the task force and the meeting took off on the wrong footing with its focus on cost and not on solution. Very soon the meeting turned into collective IT bashing by PH and MH, and Siva had to intervene with the following forceful plea to stop the bickering and get the focus on solution

> *Guys, can I make a point here please? I feel a bit offended or bit sad, because we are now trying to talk as, "IT said so, so we are not doing so". After this meeting, the whole group, everybody around the table are going to sit together and do the project. For a moment, let's take the point and leave the name IT or XX, We are one single goddamn company. Please I request you. (Voice raises and turns emotional)*
>
> *Exhibit A, DAM Workshop Transcript, Appendix 10.2*

The workshop meandered for ninety minutes and ended with a terse remark from the senior manager of PH that he cannot go up to the executive leadership with the suggested cost.

Thus, contrary to what was agreed within the task force, the workshop did not discuss a solution or solution options; instead the workshop was used to attack the IT costs. After the meeting Siva expressed his anger and disappointment to the local leadership and the taskforce about the workshop. In response, a second workshop was established with the explicit agenda to discuss the solution options alone.

4.7.1.2 The Second Solution Workshop

The second workshop was equally badly conducted. Siva was ordered not to record the proceedings. The workshop was attended by three designers from EH; one representative from MG and the DAM project manager. IT was excluded. The MG representative, known for her aversion to IT was holding a candid discussion with EH on methods by which IT could be eliminated from the exercise. Siva tried to argue against this approach which was not listened to. In protest, he left the workshop mid-way. Thereafter, the outcomes of the two workshops were discussed with the CIO. The taskforce was notified that IT would veto any solution that eliminates the use of IT systems.

The action to mitigate silo behaviour ended as a failure as the local leadership stance and behaviour reinforced, rather than mitigated, such behaviour. As a consequence of the failure of this action, planned subsequent actions to induce creative abrasion and ideation were unable to be executed.

During both workshops, Siva posed several open-ended questions to the participants concerning a vision of the product, both from a customer and project perspective. Such questions were intended to spark inclusive discussions leading to the clarification and crystallisation of requirements. Siva was ready to facilitate healthy discussion and creatively abrasive debate which he hoped would lead to the generation of new ideas. Instead these attempts were met with negative responses that shut out discussion on his input, as the focus very quickly reverted to cost.

4.7.2 Improve Trust

As in the first spiral, attempting to build trust was an onerous task. Siva discussed the strong resentment to IT and the IT project manager in particular, with the CIO. Surprisingly, the mild-mannered CIO expressed his strong distrust of the DAM project manager from PH and questioned his integrity. Siva realised that distrust between the groups was widely prevalent within the ranks of the executive leadership as well, but was deftly concealed. The CIO offered to consider replacing the IT project manager if the steering group would agree to replace the DAM project manager. This did not eventuate.

The CIO had formal and informal communications with key IT project personnel and appealed to their professional pride by urging them not to allow the abandonment of the project. While this had a positive effect on the morale of the IT camp, it did nothing to lessen their distrust of PH. As an illustration of this distrust, after the first solution workshop the senior manager from PH asked for one-liner explanations of the functionality of the IT systems used in the design. The IT project manager flatly refused and wanted a formal email explaining the intent of the request and how the furnished details would be used. Upon Siva's intervention, the IT project manager began quoting earlier instances where such information was misused to embarrass IT. Caught in the middle, Siva had to stand as guarantor to both parties for information to flow.

Siva also employed the following tacit strategies to reduce distrust amongst the groups.

- Deterrence: By increasing the perceived power of IT through active involvement of the CIO in project governance, local leadership was deterred from mounting further actions to eliminate IT, and was forced to accept IT within the project.
- Provide Alternatives: To soften the impact of distrust, Siva increasingly positioned himself as a trusted third party in an attempt to underwrite the risks of trust violation.
- Manage Expectations: The expectations between the parties were carefully managed towards the adoption of a common purpose that appealed to the professional pride of individuals.

Regardless of these interventions, the actions failed and the distrust prevailed.

4.7.3 Alter Local Leadership Practices

As planned, Siva engaged local leadership in pre-meeting priming and post-meeting reviews wherein he tried to persuade them to adopt basic practices such as suspending bias, actively listening and seeking the rationale behind opinions. Whilst the local leadership agreed to such approaches in private, they reverted to counterproductive behaviour at the meetings and workshops. Siva was left wondering whether this was a consequence of their unwillingness to change or whether it was due to political posturing in the presence of MG. Regardless of the motivation for their behaviour, the efforts of Siva did not yield any positive results in this domain.

4.7.4 Application of Action Research Principles

The application of Action Research principles and the observed outcome was identical to that of Spiral 1 described in table 4-4. In other words, even in spiral 2, the ability to apply Action Research principles did not improve due to the absence of a single cohesive project team.

4.8 Learning from the Second Spiral

4.8.1 Observation on Alignment to Theories

The observations on alignment to theories were identical to that of Spiral 1 described in table 4-5.

4.8.2 Trust Factors

Distrust asserted its presence like an elephant in the room. The work done in first spiral, and the actions taken in the second, to improve trust failed dismally as MG and PH colluded in undermining IT.

An insight gained during this action spiral was that of widespread incompetence – in particular the inability of local leadership to understand the underlying design limitations and rationales. This issue of the technical limitations of project stakeholders seemed to be a further manifestation of a more deep rooted problem across TNC. Project managers from PH often declare proudly that they are not technical (see transcripts). At TNC, being 'not technical' is often worn as a badge of honour by the executives and upwardly mobile individuals. Within the project, MG personnel had neither IT nor engineering knowledge to appreciate the ground realities of building and supporting the DAM product. This weakness could have been easily overcome by seeking explanations from IT (with an open mind and willingness to learn) had these relationships been characterised by greater trust.

4.8.3 Need for Appropriate Focus

The tenuous shift in focus from cost to solution that arose from taskforce commitments could not be sustained at the two solution workshops. In particular, the attitude and stance of MG stakeholders was enough to undermine this strategy.

The structural, operational and cultural obstacles proved far too difficult for someone with a very limited power base to overcome. In order to address this limitation, senior managers near the top of the power hierarchy would need to be deployed to ensure the requisite focus of action in the next spiral of AR.

4.8.4 Leadership Practices

As in the first spiral, all attempts by Siva to influence the practices of local leadership were ineffective. The question remained: were they incapable of changing their negative practices or were they enacting a charade of sorts? It seemed to Siva that there was another agenda hidden behind the lack of transparency of local leadership practices.

4.9 Re-Strategising for the Third Spiral

Siva attempted to initiate a third spiral of AR, proposing the following actions:

- The leader of the IT group would brief the executive leadership on the technical issues of the project and get them to express their unequivocal commitment to the product.
- The IT group leader would push for a discussion of the product design at the next executive steering meeting to lend impetus to solution development activities at the project level.
- Siva would attempt to facilitate creative abrasion and ideation during the solution discussions.

4.10 The Third Spiral of Action

The third spiral took place between 29 Sep 08 and 15 Oct 08. It concentrated on getting the different groups to discuss a potential solution through the solicitation of executive leadership support and promoting ideation through the practice of creative abrasion. The details of the administered actions and observed effects are documented below. Table 4-7 provides a summary of the actions and outcome.

Focus Area	Actions	Outcome
Reinforce Project Goal & Create Shared Purpose	Work behind the scene through CIO to get executive leadership to participate in a solution workshop to signal their commitment to this product.	The workshop took place but the executive leadership did not participate. The expected impact of leadership reinforcement of the goal did not eventuate.
	Conduct a solution workshop with total focus upon the creation of a commonality of purpose amongst the groups.	The workshop was called but many key players failed to attend. The workshop was more a token activity and lacked serious purpose. Soon into the proceedings it was decided to partner with a vendor who would deliver the solution (effectively outsourcing the task).
Improve Trust & Break Silo Behaviours	Same set of actions as in spiral 2 was planned to be administered.	The project shifted to outsourcing to avoid IT. Therefore the planned actions could not be implemented.
Improve Local Leadership Practices	Same set of actions as in spiral 2 was planned to be administered	Actions did not yield the expected results.

Table 4-7 Actions & Outcome for Spiral 3

The IT group leader briefed other stakeholders on the technical realities of the task and urged them to participate in key meetings and workshops aimed at finding a solution. In response the executive leadership decreed the local leadership to deliver the product at agreeable cost or face the consequences. The local leadership who discussed this decree with Siva agreed to the suggestion of trying out the solution workshop once again. The executive leadership (the CIO and the presidents of PH and EH) promised to attend the workshop, as observers and as an expression of their commitment to the product.

The executive leadership did not attend the workshop. It was led by the DAM project manager and attended by IT designers, the IT project manager, EH designers and a junior representative from MG. The senior manager from PH chose not to attend and the senior representative from MG chose to dial in. The President PH and CIO did not show up. Siva was ordered not to record the proceedings.

In an attempt to deliver the product quickly, it was decided to co-develop the product with a vendor who had earlier experience in this domain. Through this strategy, PH and MG achieved the political goal of eliminating IT through outsourcing. IT suggested an alternative of developing the solution in-house whilst using the vendor as consultant. This was rejected without discussion.

A subsequent workshop was called with the vendor team to derive the final solution. The vendor experts provided the much-wanted use case scenarios from both the customer and the company perspective. The increased knowledge about the product enabled the PH and MG groups to agree to phased product delivery. The phases of roll-out were carefully chosen to avoid regulatory road blocks and complex system integration requirements. It was agreed that the requirements would be refined based on the customer interactions and their perceived values. Under this arrangement the product was to be delivered from the vendor's platforms with TNC holding the management rights to the solution.

4.11 Post Implementation Review

Siva requested a post implementation review (PIR) with the local leadership to understand the reasons for the troubles in the DAM project and identify actions to prevent them from recurring in the subsequent projects. In response, local leadership agreed to hold two PIR meetings one with the key group members and the other with the executive leadership; the former eventuated in a weak form and the later did not.

After protracted delays, the PIR meeting with the key group members took place late in Jan 2009. It was attended by one manager from IT, one EH representative, the DAM project manager (the convenor) and Siva. MG representatives and the GM of PH declined the invitation to attend whilst the IT project manager had since left the organisation.

After an angry outburst from the IT manager on the mistreatment of IT throughout the project, the participants settled down to a constructive discussion. After this meeting, the participants requested another meeting that included the MG representatives and the GM of PH. However, no further meetings took place, either with the requested group members or with the executive leadership.

4.12 Summary of Learning from the DAM Project

The AR analysis of the DAM project provides an example of failed innovation. Although the project groups did not have the expertise or experience to develop the desired product, the executive leadership made no attempt to leverage the knowledge and experience from earlier launches of DAM in other geographies; neither did they encourage the development of new skills or the creation of new knowledge, within the project. Their focus on cost alone betrayed their lack of commitment to developing new capabilities and innovative products and their inaction throughout the project raised the question of whether in fact they were going through the motions of initiating the DAM project while secretly intending to outsource the task anyway.

The DAM project did, however, provided rich insights into what constitutes an innovation-averse culture by showing how local and executive leadership can inhibit innovation in a project. In this respect, the project highlighted several factors that constrain innovation; details of which are documented in the following sections.

4.12.1 Individual Disposition as a Consequence of Wider Organisational Resistance

Throughout the project, individuals at all levels were very defensive, risk-averse, and hesitant to engage in problem solving. The project showed that individuals took their cue from the executive leadership's tacit approach to project issues.

Another significant contributor to the siloed and defensive behaviour of the individuals and the teams was the disposition of the local leadership and its work practices. Negative influence of local leadership behaviour was telling; being openly partisan, risk averse, shifting risk to other groups, defensive and disinterested in solving the problems, drove the different teams to silo behaviour rendering cross-group collaboration and finding innovative solutions, impossible.

4.12.2 Risk Avoidance or Political Strategy?

The local leadership (in specific the PH and the MG personnel) were not keen to find answers to the unknown and were going out of their way to avoid encountering the unknown (refer the

DAM workshop transcripts in Appendix 10.2). Effectively the teams were avoiding any learning or knowledge building; they were keen to interpret the problem within their frames of knowledge. Whether this was risk-averse behaviour or an exercise in organisational politics (the question of whether the executive leadership favoured an outsourcing option from the beginning) remains unanswered. It seems likely that MG favoured such an option from the start.

4.12.3 Leadership Practices

The failure of executive leadership to engage meaningfully in the project was one of the main reasons for its failure. By failing to communicate their vision, intent and commitment to the groups, they left these groups guessing as to their real intentions and motives. These poor practices resulted in general apathy and disinterest in the project. Furthermore, their lack of commitment and 'distance' from the project allowed local leadership to give all the competitive and adversarial politics of organisational silos full rein within the project. Old scores were settled at the cost of collective idea generation and value-creation. The project shows that, in the absence of effective leadership frameworks for innovation, all of the constraints of industrial era enterprise logic are allowed full sway over every day work practices. As a consequence, no learning was witnessed other than that associated with survival in such an organisational milieu; as local leadership avoided options that, although more risky, would have been more rewarding for all.

4.12.4 Innovation Ecosystem or Culture

The project did not provide an opportunity to observe or understand an innovative ecosystem in action. The attempt to initiate such an ecosystem through the action-research process failed.

4.12.5 Role of Siva in Facilitating Innovation

The role Siva played in the project as an emissary of CIO and facilitating of AR process through local leadership merits a detailed scrutiny. Despite the facts that the project did not have a cohesive team, the executive leadership drove different conflicting political agenda, the local

leadership mirrored the executive leadership and the teams remained virtually disengaged and strategising to cover them from any fallout; could Siva have done things differently to drive a better outcome?

In the first spiral Siva operated like a diplomat, he tried to mediate between the groups to align to a common goal using his acceptance. When this did not yield desired results and the second spiral too was heading for failure (refer to the discussions on first and second solution workshops), Siva appeared to press ahead with the same set of actions as the first spiral. Could Siva have displayed better commitment through bold and radical actions? During the third spiral when the executive leadership reneged their commitment to attend the workshop, could Siva, using his relations and acceptance with the executive leadership, have personally persuaded them for a demonstrable commitment? It appears that Siva chose the easy options and behaved like a consultant with all care and no responsibility. Perhaps, deep within himself, Siva realised that in the prevailing political scenario where his boss the CIO was the weakest link, avoided taking difficult actions for the fear of being a proxy victim in the political fight. It appeared Siva was suffering from the very aspects he was trying to shield the teams from namely habitus and the ignominy of failure. Was this behaviour of Siva driven by the project structure or by the political realities?

In large corporations, projects are run by project management organisation that delivers the project to the given specifications by 'coordinating' the different stakeholder teams. The project management group using proven project methodologies run a process that lets the solution be decided by the stakeholders who hold the subject matter expertise, in effect the project management does not own the solution, and the ownership rests with the stakeholder groups. Often the decisions arrived at on solutions is a lowest common denomination of the different options and opinions aired and never a synthesis of divergent opinions and ideas which are precursor to new knowledge creation and eventually to innovative outcomes (Nonanka 1994). The DAM project was no exception to the typical corporate project.

Would Siva have performed better had there been a project structure outlined in figure 4-3 where the local leadership had a mandated leadership authority over the different teams?

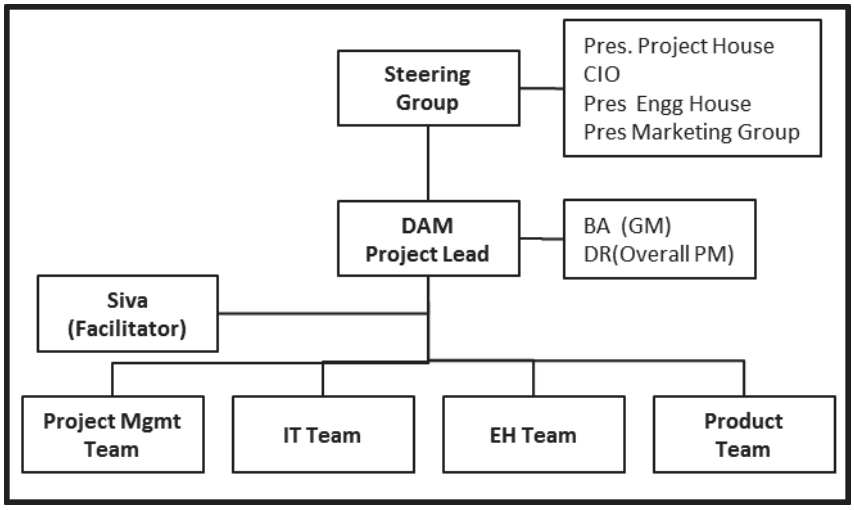

Figure 4-3 Possible Effective Project Structure for DAM

Could innovative outcomes happen only with leadership drive as indicated by Glor (1997) or middle management (local leadership) commitment as observed by Nonaka (1994) and Liker (2003)? In the DAM project would Siva have had a better chance of driving innovative outcomes had he been a local leader instead of a facilitator? I will address these points in Chapter 8 (section) when I am comparing the results the DAM project with the other two projects in which Siva operated as local leader.

CHAPTER 5 – FIELD WORK – THE CBOY PROJECT

5 The CBOY Project

This is the second of the three field work projects I conducted. This project stood out as an example of successful innovation. The project drove home the importance of developing the appropriate knowledge and skills to address specific problems, and provided rich insights into the leadership practices that underpin successful innovation in corporate projects.

5.1 Introduction

Spam mails are unsolicited emails, sent in very large volumes it can affect the mail systems of recipient organisations. Spam problem at TNC has always been very acute with spam volume of over 95% of its incoming emails. TNC has a three-tier anti-spam solution with protocol filters at the first; reputation filters at the second; and content filters at the third.

Of the three tiers, the reputation filters were the most important as they were blocking over 70% of the incoming spam. The reputation servers rely on a global reputation database of known spam sources to block emails coming from those sources. Early in 2008, spammers developed a technique to spam a specific corporation without getting detected by the reputation filters. TNC was targeted by such spammers and as result its third tier filters became significantly overloaded, introducing a high risk of mail system failure.

A project, codenamed Cowboy (CBOY), was initiated under the guidance of Siva, with instructions to resolve this problem quickly. The option of deploying additional content filtering servers proportional to the incoming spam volume was discounted as a strategy; as it would put TNC always on the defensive and TNC would have to endlessly increase its filtering servers proportional to the incoming spam. This strategy, in addition to placing an uncapped expenditure burden on TNC, would also introduce attendant burden of managing ever increasing number of servers.

Siva decided to inject a lateral thinking (cross applying learning from an earlier problem solving exercise) in addressing the spam problem. He proposed to engage the spammers asymmetrically by

neutralising their methods.. This lateral thinking and the resultant innovative idea had its origins from an earlier innovative virus protection technique implemented in TNC. Instead of relying on the anti-virus software's signatures to detect and repel incoming viruses, TNC computers and networks were configured to block all the avenues a virus would use to propagate. Siva propositioned this concept to be extrapolated to the Spam problem. The proposition was intrinsically complex as the modus operandi of targeted spamming was neither clear nor understood.

5.2 Background to the Project

The CBOY project had four principal stakeholders namely:

- The Security Group (SG) that manages the security of the company and accountable for providing solutions to protect TNC from the spam problem.
- The Operations Group (OG) that manages and operates the IT infrastructure of TNC and has the right to veto any solution on grounds of risk to operations.
- The Support Integration Group (SIG), an adjunct arm of OG that develops and supports the solutions. SIG are very sensitive to the postures of OG.
- TNC Executive Team (ET). Though not a stakeholder in strictest of terms, it is influential in the type of solution deployed in the email space as they are markedly intolerant of any outages or sufferance to the firm's email capabilities.

Figure 5-1 represents the project structure and the key groups.

Developing a spam containment solution is always a challenge, as the solution has to be trialled in a live environment. This means the capacity to quickly reverse the implementation in the event of malfunctions must be maintained. Consequently, OG, who are very risk averse would not entertain any solution that was new and untested in the industry. Following suit, SIG refused to take any approach to the problem that did not please OG. Siva,

though cognisant of these organisational limitations, decided to push for an innovative solution.

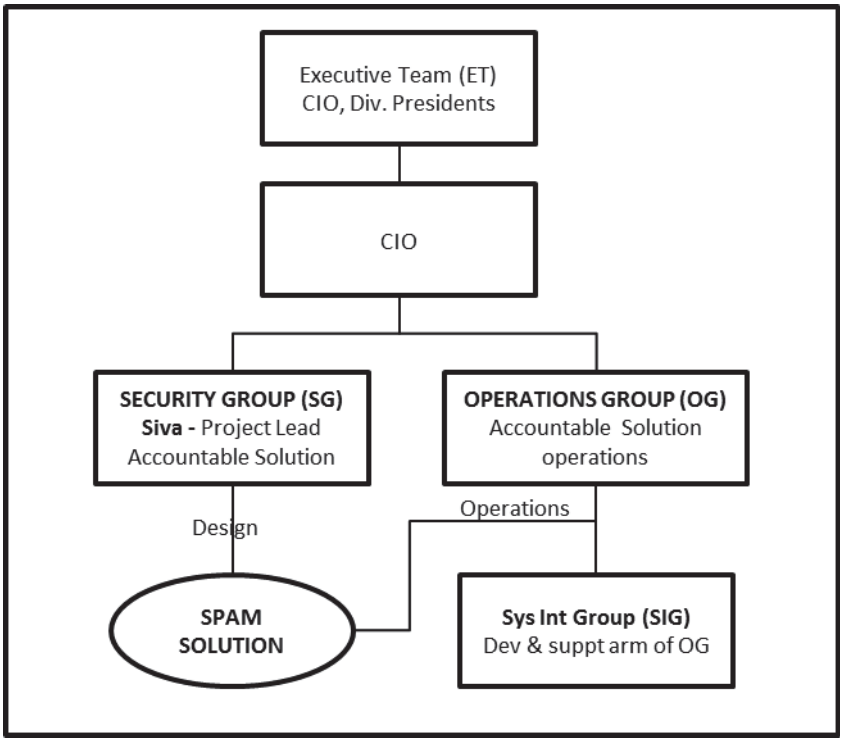

Figure 5-1 CBOY Project Structure

The project was initiated in mid May 2008 and was successfully completed in mid-July 2008. The project team comprised Siva, as the sponsor, with Jim from SG and Luc from SIG as key resources with support from industry experts on Spam from USA. The resources Jim and Luc were very accomplished and highly skilled professionals with stellar performance records. Furthermore, Siva knew that they worked well together. Siva doubled as project leader and hence performed the role of local leadership as well. ET's involvement in the project was negligible except for its tacit support of Siva's leadership of the project. The project had fairly clear requirements that were articulated and understood but not documented. Table 5-1 summarises the findings of the initial planning phase.

Focus Area	Key Factors	Observation
Team Behaviour	Habitus – collective belief and disposition	Jim and Luc, though known to be positively attuned to seek innovative solutions, were resisting finding solutions that were innovative, because of their fear of failure in this project and its consequences within the company.
	Methodological Individualism – disposition of key personnel	
	Cohesiveness of Purpose – assimilation of diverse opinions to foster common purpose for the task	The team had a good track record in finding effective solutions to problems by working off each other's ideas.
	Intent on knowing the problems (confronting uncomfortable truths)	The team was cautiously positive towards exploring the problems but its fear of an organisational backlash if the email system went down, was inhibiting its creativity.
Managerial Behaviour	Allowing people to fail without blame	To be attempted in the project
	Providing support – shield from unrealistic pressures	To be attempted in the project
	Positioning task as reward – appealing to the intrinsic motivation of the professionals to engage in problem solving as an expression of professional competence.	To be attempted in the project
	Promote ideation and creative abrasion	To be attempted in the project
Knowledge Creation	Learning observed	To be observed during the course of the project
	Knowledge created	To be observed during the course of the project
	Innovativeness of outcome	To be observed during the course of the project

Table 5-1 Planning Phase - Summary of Analysis

5.3 Framing Actions

The intent of Siva in this exercise was to solve the spam problem at hand, promote innovation in the project and study the role of leadership work practices in facilitating the innovation. Siva, analysing the project situation decided to target the team and managerial behaviours with a set of premeditated actions. Through these actions, Siva hoped to promote learning and new knowledge creation in the project. Table 5-2 provides the summary of actions planned by Siva for spiral 1.

<table>
<tr><th>Focus Area</th><th>Key Factors</th><th>Actions Planned</th></tr>
<tr><td rowspan="4">Team Behaviour</td><td>Habitus – Collective belief and disposition</td><td rowspan="2">Provide psychological safety
Shield the team from organisational fall out when exploring and adopting new approaches.
Provide the team with explicit assurances that the risks of trying out new options would be fully underwritten by Siva. In other words, the team would be given the full ownership of the successes and Siva would own the risks associated with failures</td></tr>
<tr><td>Methodological Individualism – disposition of key personnel</td></tr>
<tr><td>Cohesiveness of Purpose – assimilation of diverse opinions to foster common purpose for the task</td><td rowspan="2">Keep the focus on the goal and direction
Understand and articulate the problem through team discussions and debates;
Abstract and contextualise the problem for better comprehension and positioning of expectations;
Recurrently reconfirm the understanding of the problem and alignment of action to the final goal.</td></tr>
<tr><td>Learning how to learn - understanding the problems (and confronting uncomfortable truths)</td></tr>
<tr><td rowspan="2">Leadership Practices</td><td>Aid in generating creative ideas</td><td rowspan="2">Positive Local Leadership Practices
Take ownership of the risk. Underwrite risk of any failure.</td></tr>
<tr><td>Manage the politics during the conversion of these ideas into an</td></tr>
</table>

	innovative solution	Shield the team from deadline and cost pressures Encourage ideation[10] and the application of knowledge from related domains. Encourage 'creatively abrasive' debate and objective triaging of solution options.
	Position task as reward – appeal to the team members' intrinsic value of 'challenge' and professionalism.	

Table 5-2 Formulated Actions for Spiral 1

5.4 The First Spiral of Action

The first spiral of the CBOY project took place between 27 and 30 May 2008. During this period, Siva consciously executed all the planned actions, and the entire process was documented. Table 5-3 provides a summary of the outcomes.

Focus Area	Actions	Outcome
Leadership Practices	Create an environment of risk-taking and creative endeavour.	Initially, this proved difficult to achieve. The risk-averse mental models of team members were deeply ingrained. As a consequence ideation was shallow and the team was unable to produce an acceptable outcome. After considerable effort to reassure team members that they would be protected from organisational fall-out, they began to research and understand the problem better. The excitement of the challenge led to the team actively exploring the problem.

[10] Culturally, TNC is not attuned to evaluating multiple ideas in projects; usually a quick idea will be floated and if it appears feasible and easy enough to implement, it will be championed. Since the funding process requires the evaluation of multiple options, projects float the option they want to adopt, plus two dummy options (such as doing nothing or doing something totally untenable), to satisfy the process and gain the requisite funding for the option of their choice.

	Keep the team focused on the explicit goal of the project.	The initial set of proposed solutions was essentially defeatist in nature. By Siva keeping the focus on understanding the problem to reach an effective and simple solution, the team eventually moved towards learning more about the problem and gain knowledge in the solution space.
	Generate the conditions for creative ideation.	The team engaged in understanding the problem better and building new knowledge as a consequence. Through collaboration and practices such as 'creative abrasion', team began to generate creative ideas.
Observe Learning and New Knowledge Creation	Observe the outcome	The first spiral showed significant learning and deeper understanding of the problem but could not observe new knowledge being articulated. Perhaps the knowledge generated could have been tacit.

Table 5-3 Actions & Outcome for Spiral 1

A few months before this spam problem emerged, this issue was discussed with industry experts from the USA. They feared that targeted spam would neutralise the effectiveness of their reputation server products but they did not have any new solutions to offer. These comments seemed to have reinforced the prevailing negative mindset (*habitus)* at TNC. At the first meeting of the project, Jim declared that there was no solution to the current spam problem other than deploying spam filters (servers) proportional to the volume of spam. Jim's proposal was orthogonal to asymmetric defence techniques on which the TNC's earlier spam and virus defences were built. Jim was effectively displaying a very 'closed minded' behaviour, a hindrance to innovation. This defeatist stance from a highly talented individual was intriguing.

In an attempt to get Jim out of this negative mindset, Siva engaged him in discussions aimed at understanding the underlying drivers and rationales for his negative conclusions. Siva

empathised with Jim on the structural difficulties of the problem, and offered support to overcome them. Eventually Jim opened up and explained. He recounted the hurdles he faced with OG and SIG in all his earlier projects and declared that he was not up to another round of political encounters with those groups. Siva reassured Jim that he would own the handling of the messy politics and shield Jim from the politics. Besides Siva assured Jim that he would underwrite any risks associated with the solution Jim would come up with.

Jim thawed and gradually became willing to think about alternative solution options. However, even as he showed less resistance, Jim remained hesitant to explore bold options. It appeared as if such reluctance was his way of testing Siva's commitment to owning the risk. This was later confirmed in the post implementation review (see Appendix 11.2). Both ideas produced by Jim during this spiral – that of splitting a set of functions from the software package and repositioning them in the bespoke solution; and that of disallowing access to TNC mail lists from the Internet - demonstrated his lack of creative engagement with the issue.

In response, Siva did not criticise these proposed solutions. He parked the former as a resource intensive elaborate solution and the later as a limited benefit solution and commenced exploring alternatives with Jim. In effect, Siva was actively engaging with Jim in generating new ideas known as a part of the ideation process. Furthermore, he empathised with Jim and helped him to contextualise the problem by refreshing his memory on earlier problems and solutions. As expected, Jim once again expressed his fear of coming up with an unconventional solution, citing the resistance he would face from OG and SIG. Siva once again reassured that he would insulate Jim by handling those issues himself and urged Jim to come up with better options. He also urged Jim to engage in more collaborative work with Luc on the issue. It appeared that Siva had to reassure Jim repeatedly of his commitment to support Jim and shield him from organisational politics.

Siva closed the meeting without setting a timetable so as not to impose any time pressure on Jim. This was intended as an expression of trust in Jim. Throughout that day, Siva observed Jim actively pursuing Internet-based research; communicating with peers in the industry; and engaging in intense debate with Luc on the spam problem.

5.4.1 Application of Action Research Principles

Table 5-4 below, summarises the application of AR principles in the spiral and the corresponding observations.

AR Principles	Observations
Reflexive Critique Teams reflect on issues and processes; make the concerns, biases, assumptions and interpretations explicit.	Initially the teams were closed minded and would not like to reflect on the issues and assumptions. After Siva working the SG team, the SG team turned open minded and were able to articulate issues, concerns and assumptions. The key observation was that the teams required some priming and repeated reassurances before they would engage in reflexive critiques.
Dialectical Critique Team members engage in dialogue with each other to validate the reality in its context.	As outlined in this section, the SG team was engaging in active dialogue with Siva and amongst themselves (Jim-Luc-Vendor-Industry peers) and were exploring options. But the underlying fears prevented the team from exploring bolder options.
Collaborative Resource Teams treat each persons' idea equally significantly and learn from contradictions; synthesising (Nonaka 2003) into a single view point.	Though collaborative work was observed, the team behaviour did not reach this state of learning from contradictions and synthesising diverse ideas.
Risk Challenge to status quo introduces risk of ego, fear of failures. These fears are allayed by local leadership and learning facilitated.	Local leadership effectively underwrote the risk of failures. This enabled the team to engage positively and begin thinking solution options. Nevertheless the teams were not fully out of their fear (risk) zone.
Plural Structure Ability to maintain and document	This was observed as documented in this section earlier.

healthy ongoing discussions until final conclusions reached (provides for future reflections).	

Table 5-4 Application of AR Principles in Spiral 1

5.5 Learning from the First Spiral

5.5.1 Observation on Alignment to Theories

Table 5-5 below summarises the observations relating to the theories underpinning the research.

Theories	Observations
SECI –*Ba* (Nonaka 1994) shared context in motion	Nascent shared context was observed towards the end of the spiral.
Social Capital (Nahapeit & Ghoshal 1998) network of relations and the assets mobilised by it.	Once the reluctant teams OG and SIG were isolated, SG team started forming network or relations internally within themselves and externally with vendors and industry peers.
Practice Theory Features Practical Skills (Whittington 1996) Practical Wisdom (Nonaka 1994) In situ coping (Raelin 2007)	The local leadership very consciously adopted this approach without getting emotionally tangled with a set of processes or precedence; instead objectively pursued the project goals.
Leadership Styles Leadership style varies in different contexts (Chia 2004)	Leadership style varied with the context. Initially Siva adopted a typical project leader style of leadership to define the problem and let the teams come with innovative solutions. When he found it was not working he shifted the leadership style to that of a coach and facilitator and worked towards altering the mindset and creating an open and supportive culture to induce out of the box thinking.
Cultural Transformation	No significant cultural transformation or change observed. However SG

Critical social theory (Bohman 2008; Leonard 2004)	team was thawing to exploration and being open minded in problem solving.
Theory, Practice, Transformation How practice and theory recursively reform each other leading to transformation (Praxis).	At the outset Siva adopted a initiating structure style of leadership (Stogdill 1974; Bass 1990) where he operated like project leader style to drive the project; in practice he observed the presence of strong negative mindset that would impede the success. So Siva altered his leadership style to consideration structure (Stogdill 1974; Bass 1990) where operated like a coach to understand the underlying issues and alter the mindset of the team. Once Siva addressed the mindset issues, he reverted to initiating structure of leadership style where he contextualised the problems and goaded the team to think radical options. In practice, the team was reluctant and appeared as if they were testing Siva's resolve in underwriting the risk. Siva realised the need for repeated reassurances on risk front. Siva shifted to consideration structure and convinced the team of his support and risk underwriting. Once the team were convinced of Siva's support, they moved to evaluating options albeit simple ones and politically correct ones. Siva once again reverted to initiation structure style of leadership, implied that such safe options were not acceptable and more was expected of the team. The team understood the intent of the local leadership on the problem, and began exploring radical solution options. The team explored with renewed vigour, the social assets were put to work (collaborations, discussions, researching etc.) and transformation within the team was in the offing. Thus this recursive learning between the leader and the led and the leader adopting different leadership styles appropriate to the context led to leader fine tuning his leadership methods (in situ coping) which aided in a team level transformation of pursuing innovative solution options.
Shared Leadership	The management style of Siva where he treated Jim as equal and subject matter expert established a shared leadership framework. This is corroborated in the post implementation review.

Hermeneutic Principles in Data Analysis	Not observed in this spiral.

Table 5-5 Alignment to Theories in Spiral 1

5.5.2 Active Leadership Participation

The local leader actively participated with the team in problem solving – describing and contextualising the problem, seeking to understand the problem and acknowledging the issues confronting the team. By this action, Siva led the team by example into the domain of 'open minded learning'. This led to new learning and knowledge creation within the team.

5.5.3 Systemic Shortcomings Must be Recognised

Getting the politics of the issues into the open and acknowledging them, was key to changing Jim's mental approach to the challenge. The practice of recognizing and not dismissing the political issues reassured the team of the local leadership's commitment to sheltering them from the consequences of these politics. This assisted the team to bracket such concerns and to focus on engaging creatively with the problem. This facilitated more focused and more productive meetings.

5.5.4 Collaboration is the Bridge to Ideation

Once the right political environment was created, open-minded truth seeking behaviour was taking root in the team. Collaboration thrived in many ways, it included collaboration with internal peers as well as external industry peers, and through cyber forums. By pre-provisioning collaboration channels (bringing in Luc and opening avenues with international spam experts) local leadership facilitated active collaboration.

5.6 Re-Strategising for the Second Spiral

With the advent of a positive first spiral where the team was engaging the problem and learning the nuances of the problem, Siva decided to launch the second spiral with the goals of framing the problem effectively, building the requisite new knowledge to solve the problem and encouraging the teams to embrace innovative solutions along with its attendant risk. To achieve these goals, Siva decided to focus on explicit provisioning of psychological safety to the team, maintain focus on the goal and vision and facilitate learning and new knowledge creation.

5.7 The Second Spiral of Action

The second spiral occurred between 2 Jun 2008 and 25 Jun 2008. During this spiral all the planned actions were executed, their impact evaluated; and the outcomes documented. Table 5-6 provides a summary of the actions and outcomes.

Leadership Practices	Actions	Outcome
Provide psychological safety	Shield the team from organisational fall out when exploring and adopting new approaches. Provide explicit reminders that the risks of trying out new options will be fully underwritten by the local leadership. Reinforce that the team will own success and the leadership will own the risks / failures.	The actions appeared to have been effective in overcoming the organisational constraints. The team was fully engaged in finding an innovative solution.

Keep the focus on goal and vision	Participate actively in understanding the problem from many angles. Abstract and contextualise the problem for better comprehension thereof, and appropriate positioning of expectations. Recurrently reconfirm the understanding of, and alignment to, the final goal.	The actions have been effective in focusing the team on the goal. The team did not require re-focusing or problem re-stating during this spiral of action.
Facilitate learning and knowledge creation	Underwrite risk of any failure when trying new approaches. Shield the team from deadline and cost pressures Consciously encourage ideation and knowledge acquisition in the problem space, and cross-apply knowledge from related domains. Promote creative abrasion through (a) engagement in explicit ideation, (b) promotion of constructively passionate debate and (c) objective triaging of solution options. Consciously avoid using the terms "innovation" and "creative solution" during discussions.	Instead of Siva driving ideation, the team engaged Siva in the idea generation process. Siva served as a sounding board and was actively involved in evaluating and triaging solution options. Soon a number of ideas emerged, including the one to buy time; another interim option; and a complex option that would be difficult to implement. In effect, the options displayed the richness of the new knowledge gained about the problem. When one of the unusual options proposed by Jim was chosen for implementation, Jim was very reluctant to implement it for fear of losing face should the solution had to be reversed. When this reputational risk was addressed and CIO endorsement for the proposed solution was obtained, Jim implemented the solution
Observe learning and new knowledge creation	Make observations	The team developed rich new knowledge on the spam domain, including an intricate understanding of the techniques used by targeted spammers.

Table 5-6 Actions & Outcome for Spiral 2

On the first day of the second spiral, Jim approached Siva to provide a full picture of what was needed to promote IP profiling (reputation filters specific to TNC). In this meeting, he used Siva as a sounding board to evaluate his ideas. Jim wanted to fix a few other operational issues before commencing IP Profiling; he discussed the details behind the IP profiling and identified issues that need addressing. Siva actively participated in the discussion, critically evaluating the suggested options and clarifying the issues. During this entire conversation, Jim never mentioned anything as being insurmountable, as he had done in the previous spiral. He remained positive despite several challenging issues that arose in this meeting.

Two days later Jim called for another discussion with Siva. This time he guided Siva through the present spam protection infrastructure; his experiences in delivering the solution and, in doing so, he repeatedly compared the solutions to the paradigm of physical junk mail handling. He floated four new options that could serve as interim solutions until the IP Profiling was developed. This set of nominated options indicated that (a) Jim had understood the problem in all its dimensions; (b) had acquired full knowledge of potential solutions; and (c) had full trust in Siva as he actively engaged him in the evaluation of these options.

All four of the options suggested by Jim were pertinent to the problem, with one of them standing out as simple and yet highly original solution to the problem. This option involved exploiting a key weakness in the spammers' *modus operandi.* Involving only a minor configuration change, the proposed solution would take only a few minutes to deploy and could be reversed within minutes. However, after Siva approved the solution for implementation, Jim's courage failed him and he pleaded with Siva not to deploy this option.

This gave raise to couple of heated debates between Siva and Jim, the former wanting the solution go live and the other wanting to shelve it. Jim argued that the solution would (a) breaching a prevailing convention – being an unconventional option, Jim feared that it would be misconstrued as unprofessional practice; and (b) SG and Jim in particular may lose face when forced to reverse the solution on grounds of it being deemed an unprofessional practice. Siva would not have fears as reasons, and wanted rational reasons to shelve the solution.

Since, Jim's reluctance was based on fear, Siva instead of lecturing Jim on the merits of being bold and taking risk, embarked on a process of evaluating the risk. Siva began working with Jim in gaining a detailed understanding of the risks and in identifying mitigating factors for each risk. While this process reassured Jim, he only accepted the deployment of the solution once CIO backing was gained. This process of debates and evaluation is an instance of creative abrasion and an immense learning to the team in handling fears objectively.

With the implementation of the CBOY solution on 25 June 2008, TNC had four layered spam protection with CBOY serving as the first layer of defence. Figure 5-1 shows the degree of success TNC had using the solution, the CBOY solution had effectively neutralised the spike in spam volume due to targeted spamming. The blue line indicates the volume of the mail including spam and the pink line the volume of mail including spam after CBOY filtering. The dates on the X-axis are from 1 July to 31 July 2008.

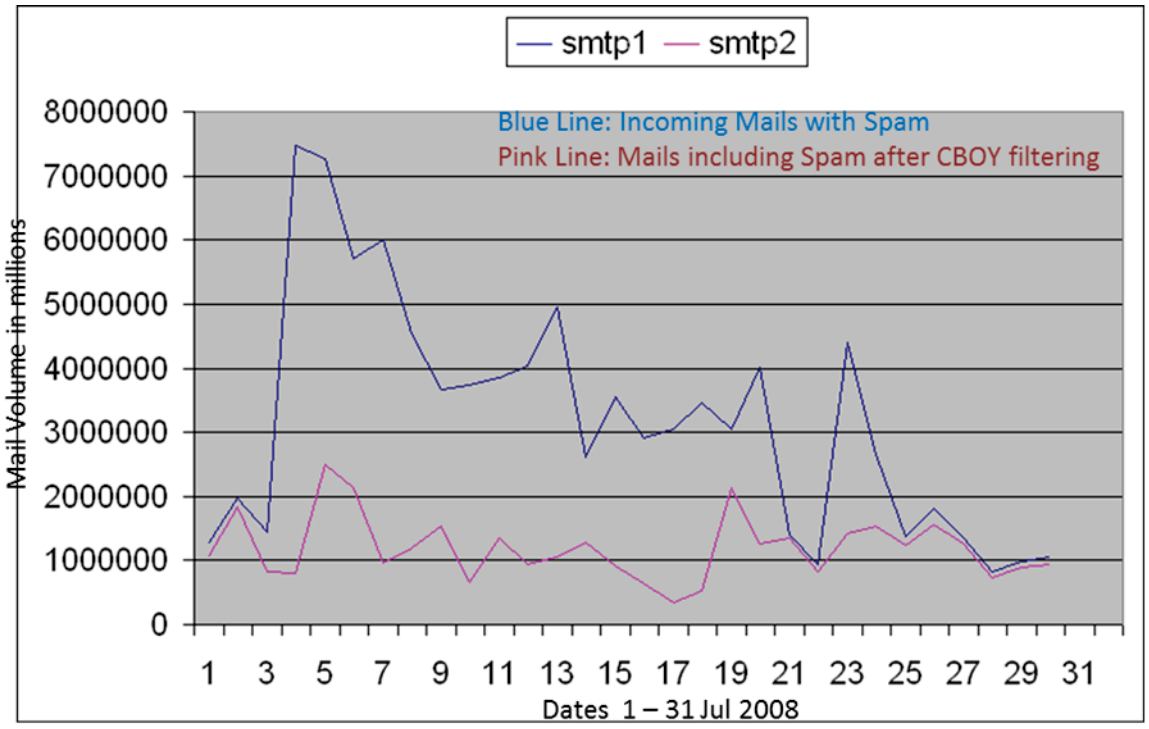

Figure 5-2 Success Parameters of the Solution

The solution was later hailed by the CIO as one of the most innovative solutions produced by the company and was showcased to TNC headquarters and to other members of TNC's executive leadership.

5.7.1 Application of Action Research Principles

Table 5-7 below, summarises the application of AR principles in the spiral and the corresponding observations.

AR Principles	Observations
Reflexive Critique Teams reflect on issues and processes; make the concerns, biases, assumptions and interpretations explicit.	The SG team was actively engaging in reflexive critique by fearlessly discussing and debating the concerns and assumptions.
Dialectical Critique Team members engage in dialogue with each other to validate the reality in its context.	The team was actively engaging in this behaviour as evidenced from the discussions of second spiral between Jim – Luc – US experts – Industry Peers.
Collaborative Resource Teams treat each persons' idea equally significantly and learn from contradictions; synthesising (Nonaka 2003) into a single view point.	The team was building on each other's idea. The genesis of these set of ideas stemmed from a related approach adopted in virus management. The four options and the option chosen as a solution was a synthesis of multiple paradigms and input from several collaborators.
Risk Challenge to status quo introduces risk of ego, fear of failures. These fears are allayed by local leadership and learning	Once the teams tested Siva and understood that the risk underwriting was for real, they engaged in bold options and eventually came up with the innovative option which was adopted as the solution.

facilitated.	
Plural Structure Ability to maintain and document healthy ongoing discussions until final conclusions reached (provides for future reflections).	The dialog between Siva and Jim on adopting the innovative option is the solution of choice is a clear proof of plurality of structure.

Table 5-7 Application of AR Principles in Spiral 2

5.8 Learning from the Second Spiral

5.8.1 Observation on Alignment to Theories

Table 5-8 below, summarises the observations relating to underpinning theories behind this research made during the second spiral.

Theories	Observations
SECI – *Ba* (Nonaka 1994) shared context in motion	During the second spiral, the entire team operated on a shared context and were building on it.
Social Capital (Nahapeit & Ghoshal 1998) network of relations and the assets mobilised by it.	Social capital was well defined and established with the SG team engaging in strong internal relationships and robust external relationship. By leveraging both the networks through collaboration demonstrated the social capital at work.
Practice Theory Features Practical Skills (Whittington 1996) Practical Wisdom (Nonaka 1994) In situ coping (Raelin 2007)	The local leadership very consciously adopted this approach without getting emotionally tangled with a set of processes or precedence instead objectively pursued the goals.

Leadership Styles Leadership style varies in different contexts (Chia 2004)	In the spiral 2, leadership style varied between shared leadership (active member of the project) and servant leadership (supporting the team to succeed).
Cultural Transformation Critical social theory (Bohman 2008; Leonard 2004)	Team emancipated from 'won't do' mindset to 'can do' mindset. The teams were willing to experiment, take risk and debate merits and demerits passionately.
Theory, Practice, Transformation How practice and theory recursively reform each other leading to transformation (Praxis).	During the second spiral, Siva adopted strong project member and equal participant style of leadership and actively engaged in idea evaluation and solution selection. The team rose to this change in leadership style and debated and discussed options without reservations. Even when the team was resisting the chosen solution, it aired the rationale clearly for Siva to address. Thus the recursive learning between the leader and the led that commenced in the first spiral became well entrenched in the second to increased learning and knowledge creation in the team.
Shared Leadership	The management style of Siva where he treated Jim as equal and subject matter expert established a shared leadership framework. This is corroborated in the post implementation review.
Hermeneutic Principles in Data Analysis	Not observed in this spiral.

Table 5-8 Alignment to Theories in Spiral 2

5.8.2 Mental Models or Habitus

The mental models of individuals influence how they understand the world and what constitutes appropriate action (or inaction) in it. These mental models have their origin in the learning from previous experience (often tacit) and they manifest as deeply ingrained assumptions about *self*, *others* and *the way the world works*.

Mental models are transformed through new experiences that cater for their emotional as well as cognitive dimensions. Such transformative actions include taking the individual's assumptions seriously and gradually creating an environment in which these assumptions are shown to be inappropriate.

5.8.3 Influence of Leadership Practices on Team Behaviour

Leadership practices around risk ownership, shielding the teams from organisational politics, buffering from deadline pressures and provisioning collaboration avenues were observed to positively influence the team behaviour.

When the leadership took ownership of the risks involved and displayed open mind disposition in the problem solving process, the teams began to shed their resistance and started seeing the task as a professional challenge.

When the teams were confident of the leadership buffering from organisational politics and impractical deadline pressures, ideation and creative abrasion set in. The teams actively leveraged the collaboration avenues and expanded them to enhance the quality of ideas under servant leadership.

5.9 Post Implementation Review

A post implementation review of the project was conducted by Prof Ken Dovey, one of the Siva's research supervisors. This took the form of an interview with Jim with Siva being excluded from the interview. The interview was recorded, transcribed and independently analysed by Siva for divergence between the perception of Siva and the independent observer, Prof Dovey.

The review yielded interesting insights into the transformation of team members' mindsets. For example, the expressions Jim uses to describe his initial feelings about the solution were: *unusual approach*, *fairly negative approach*, *negative opinion* and *initially I wasn't pro putting it in (sic)*. He attributes his change of mind to the facts from his research and the leadership

support and risk protection. The full transcript of the post implementation review is provided in Appendix 11.2.

5.10 Summary of Learning from the CBOY Project

5.10.1 Promoting Deeper Understanding the Problem

In this project, the local leadership demonstrated its commitment by being open minded and wanting to understand all dimensions of the problem. This shared frames of reference between the leadership and the team, enabled the team to communicate freely with the local leadership on solution options and eliminated their need for upward management. Furthermore the practice of leadership engagement with the issue built trust in local leadership and facilitated idea-generation practices such as creative abrasion using the leadership as a participant in the exercise. This created an environment in which all members learnt *how to learn* about the problem, with team members driving this process. Around this time, the actual leadership shifted from local leadership to the team; they were driving the solution by owning it and seeing it as a challenge and as an avenue to express their professionalism.

5.10.2 Framing the Problem

Once the team understood the problem in full, their perception of the problem dramatically shifted. The initial perception of the problem was one of increased volume and their solution always gravitated around provisioning additional server capacity. When the team revised their perception to that of defending against a new method of spamming, their solution shifted to one of neutralising the modus operandi of the new spam. Ohmae (1984) observes that such clear framing of the problem stems from deeper and contextual understanding of the problem and it ultimately leads to effective and innovation solutions; this phenomenon was witnessed in the second spiral.

5.10.3 Facilitating Transformational Learning

Andrews (2005) defines transformational learning as changing oneself in co-evolution with the environment and the knowledge domains in which one is immersed. It is enabled by reflection and adduction: reflecting to find the meaning of a learning experience, and adducting to incorporate that meaning into future action through the application of knowledge and values. Through these processes, individuals' mental models were transformed and this opened up new opportunities for personal growth and leadership development.

In the CBOY project, the local leadership encouraged the team to review other related domains that may have relevant elements of knowledge. At times the local leadership had to pull the team from the environment they were in and make them see the wood for the trees e.g. contextualising the problem by Siva and drawing parallels with virus solutions etc. The team in turn synthesised their learning from multiple domains namely (a) virus solutions, (b) physical junk mail solutions, (c) researching on mail serving techniques, (d) interacting with industry peers and (e) trials and tests on different ideas to develop an expanded understanding or new knowledge.

When teams were facilitated to reflect on their inherent knowledge and review additional knowledge in related domain, the team displayed increased commitment to the project and started viewing the problem as a challenge. From where they were at the start, being closed minded and disengaged; this new mindset was a transformation. Through this transformation the team gained new knowledge in multiple domains as well expanded their knowledge on the problem domain i.e. spam handling. The post implementation review indicated the professional satisfaction of the participants, which could be equated to personal growth and development.

5.10.4 Creating an Environment in which Team Members Could Perform at their Optimal Level

During the CBOY project team members were provided a de-politicised working environment where the politics of the project were managed by the local leadership. In the formative

stages of the team development (Tuckman 1965), negatively disposed SIG group was excluded but one of their positively attuned resources Luc was inducted into the project. As observed in the two spirals, local leadership explicitly declared that they would handle the politics and shield the teams from it and backed it up with their actions. Thus when the team members were insulated from political distractions, they could focus their attention on an appropriate technical solution to the problem.

5.10.5 Enacting *Intrepreneurial* Practices

Intrepreneurial practices are those enacted in the interests of an organisation by individuals who accept the risk of having to keep such practices *under the corporate radar*. In this project, the local leadership worked behind the scenes to have Luc assigned from SIG to the project, and to get permission for the CBOY solution to go live without the usual red tape. Similar *intrepreneurial* practices by Siva allowed team members to research, experiment and trial options without time or cost pressures imposed on them. This environment of trust and creative license allowed team members to communicate freely and fearlessly with the local leadership; to enjoy the much-desired psychological safety necessary to address such a high-risk challenge; and to view the task differently (as a reward and challenge rather than as a chore or obligation).

5.10.6 Training the Team to Work with the System

In difficult situations, projects and teams, in particular, clamour for dispensations on some processes and even work towards revamping some processes. In the CBOY project, the team was tacitly encouraged to work within the limitations of the environment. While the local leadership handled the political issues, the team was expected to lead the process of finding a technical solution to the problem without relief from the process constraints. Through this approach all learnt to negotiate process obstacles. Like a good game played under trying conditions and difficult umpiring, the team played to win with the hand with which they were dealt.

5.10.7 Knowing the Team

Through the course of the project, the local leadership got to know the individuals in the team not as a resource with specific skills but as individuals with unique strengths and weaknesses. Knowing an individual as a human being helps in tapping their tacit capabilities and overcoming their limitations. This trait of knowing the staff is fast vanishing in corporate settings due to increasing depths of hierarchies and the emerging reliance on virtual teams. This phenomenon raises considerable questions for innovation in the future as in this project leadership knowledge of team members underpinned its success.

5.10.8 Risk is Part of Innovation Process

By definition, innovation involves the creation of something new. Thus, innovation will always threaten those who have a vested interest in the status quo. Furthermore, innovation constitutes a leap into the unknown and is thus threatening to those wishing to avoid mistakes and/or failures. To encourage team members to increase their risk appetite, local leadership must engage in managing their fear. In the case of CBOY, Jim had to be convinced that it was perfectly acceptable to take the risk of adopting his unconventional solution. Local leadership worked on changing the mindset of Jim through sustained effort, using logic, evidence and, most effectively, guarantees from senior management (the CIO) to get him to willingly embrace the unconventional option. At any stage forcing the idea was never considered as an option to gain mindset change.

5.11 Conclusion

The CBOY project provides substantial evidence of the effectiveness of the leadership practices employed in the project in facilitating innovation within project organisations. As one of the leadership practices, the leadership style adopted moved from transactional to transformational during the course of the project. I would assess my leadership style as a blend of transformational and servant leadership styles (Stone et.al, 1994). Since I was

focused both on the outcome and individual development; outcome focus qualifies the style to be transformational and driving knowledge creation through follower's learning (individual development) qualifies the style to be servant. The strategy of creating a local environment (eco-system), in which team members could embrace the challenge of the task without fear of failure and/or retribution from senior management, was highly successful. Fundamental to this environment was the readiness of leadership to own the risks and to manage the politics of the processes of innovation; as well as their readiness to address the human/social dynamics of creativity and collective endeavour.

CHAPTER 6: FIELD WORK – THE IHC PROJECT

6 The IHC Project

This third of the three field work projects I conducted stood out to be yet another example of successful innovation. This project provided rich insights into what promotes innovative outcomes in corporate projects; it highlighted the importance of problem understanding in driving innovative outcomes.

6.1 Introduction

TNC has been offering its executives In-house Communications (IHC) services in Australia since 2005. These services provided email, phone, organiser, maps, Internet and several utility applications including some games on mobile devices. The solution (platform) supporting the facility was rudimentary and relied on user discipline to maintain security for these services.

IT disallowed the users from directly downloading any new applications or games for IHC from Internet but allowed them only those applications and games that were tested and found to be safe for use on IHC platforms. The users who were mainly executives were naturally conservative did not view this restriction as a problem.

Around 2007, TNC began selling these IHC features as services in the market. At the same time, IHC services were extended to sales and other internal TNC staff; to contain costs, these new users were provisioned on the same rudimentary platform that was used for executives.

Pressure was mounting on IT to lift the restrictions on software download from the Internet to enable the sales force to try to sell new applications as features of IHC. Rationale and reasoning as to why this was not possible fell on deaf ears and the problem was positioned within the corridors of power as intransigent IT blocking TNC revenue streams. IT realised that it had to allow unfettered downloads from Internet as well prevent any outages to the

IHC platform due to malwares from the downloaded software. A project, code named IHC, was initiated to resolve this problem under the leadership of Siva.

6.2 Background

The IHC project had the following stakeholders:

- The Security Group (SG) who was responsible for security of TNC was accountable for delivering the solution that is secure and acceptable to all stakeholders.
- The Operations Group (OG) was responsible for managing and operating the IT infrastructure of TNC. They had the right to veto solutions on grounds of potential operational problems.
- The Support Integration Group (SIG), a group that works for the OG as sub-contractors were in-charge of developing and deploying the solution. Though the SIG were supposed to be the subject matter experts on IHC, the SIG's skills on IHC were basic and they depended on IHC vendors for advanced skills. As the SIG worked closely with the OG, they were very sensitive to the postures of the OG and always attempted to please the OG.
- The Product Marketing Group (PMG) marketed IHC services to the wider market and was keen to have all the restrictions taken off the IHC infrastructure. They had unchecked access to the corridors of power and their arguments of revenue impacts always won.

Figure 6-1 represents the IHC project structure and the relationship between different stakeholders.

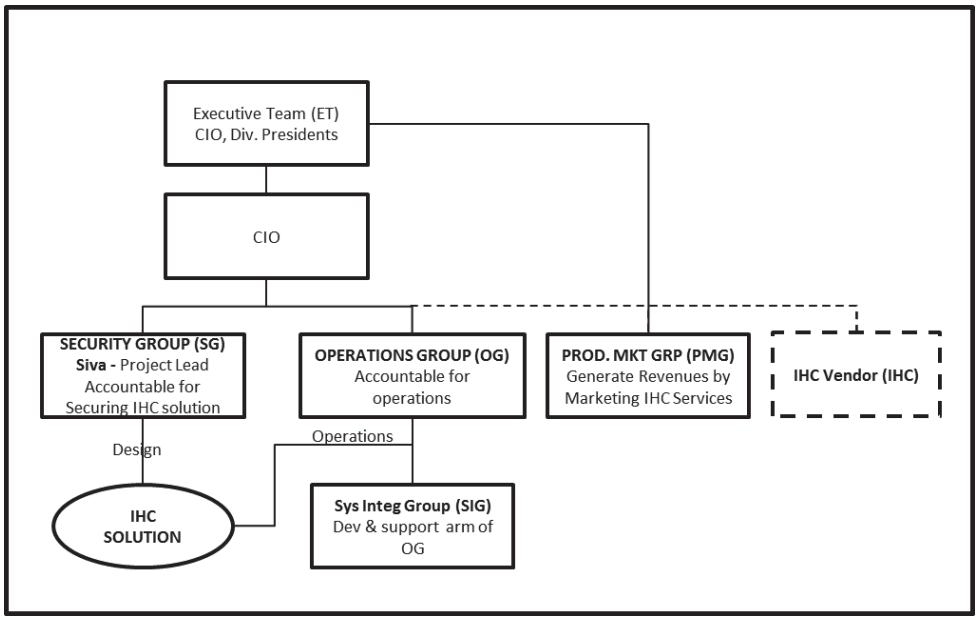

Figure 6-1 IHC Project Structure

The problem on the table was that the IHC platform was positioned incorrectly within the TNC networks. Repositioning them behind firewalls appeared to be the ideal solution but the vendor documentation was ambivalent about it. Vendor documentations warned of performance penalties in some cases and silent in others. The vendor technologists were equally non-committal. This situation was exploited by the stakeholder departments PMG, OG and SIG, all of whom were against any attempts to relocate the infrastructure behind firewalls, citing performance concerns. If SG overruled the objections of the stakeholders and pushed for relocating the platforms behind firewalls, it would cost between $300K and $800K and would take six months to implement the solution. Even then, should the IHC platform encounter any performance problems, SG would be blamed, solution jettisoned and SG will lose credibility. Under the circumstances, the expense and the attendant risk of overruling the other stakeholders was unacceptable. The situation warranted creative thinking and innovative solutions to fix the problem. Since the resources available from the stakeholder groups neither possessed good subject matter expertise (domain skills) nor were inclined to finding a creative solution, the task of exploring a feasible solution fell on SG.

Siva selected Reg to spearhead the project. Reg was an experienced professional who had earlier developed complex forensics and surveillance skills on his own volition without any assistance, and he has also built some very innovative surveillance and monitoring software systems for TNC. Reg is as competent as he is temperamental and, even at the best of times, is a difficult individual to manage, especially when he is not interested in a task.

In this Action Research project, Siva explicitly decided not to use the word innovation or imply that he is promoting innovation within the project to safeguard against participants exploiting the innovation rhetoric as an excuse to propose untenable ideas. The project was to end when an effective solution was implemented.

6.3 Framing Actions

Siva's initial strategies were oriented towards creating a project environment that encouraged learning and knowledge creation. Table 6-1 provides the summary of actions planned by him for Spiral 1 of the AR process.

Focus Area	Key Factors	Actions Planned
Team Behaviour	Address the Habitus – collective belief and disposition.	Introduce new leadership practices aimed at transforming the disposition /mindset of the team.
	Clarify and crystallise the project objectives.	Analyse and understand the problem from multiple contexts. Frame the problem accurately to pursue solutions.
Leadership Behaviour	Promote learning and knowledge development in the problem domain.	Underwrite the risk of failure. Shield the team from organisational politics.
	Promote collaborative problem solving.	Shield the team from deadline and cost pressures. Build a social environment of strongly bonded and

	Position task as reward – appeal to the intrinsic motivation of team members to engage in problem solving as an expression of professional competence.	collaborative team.
Knowledge Creation	Promote learning and knowledge creation.	Encourage the team to embark on understanding the problem, identify areas of exploration, explore, and build requisite new knowledge.

Table 6-1 Formulated Actions for Spiral 1

The actions on team behaviour was aimed at resetting the mental models of the team members and focusing them on understanding the problem from multiple dimensions to discover the real problem and *framing the problem* (discussed below).

Supporting the action on learning and knowledge creation were a set of actions on leadership practices. A collaborative environment was consciously planned by Siva (details provided later in this chapter). Leadership practices were tuned to provisioning work environments that were free from cost and time pressures, where failures were not punished and venturing into unexplored options were encouraged.

6.3.1 Framing the Problem- Clarifying and Crystallising the Project Objectives

The purpose of the project was understood differently by different groups and the entrenched blame culture in TNC was driving them to such positions.

- The PMG considered the project aim of relocating the IHC infrastructure as an unnecessary requirement imposed by a paranoid SG.
- The SG associated the aim of the project as finding a method to safeguard TNC infrastructure from the downloading of untested applications that could be

potentially malicious from the Internet. They believed that the positioning of the IHC platform behind a firewall was the obvious solution.

- The OG did not want the project to take place as any change to the status quo might introduce risks to operations. They were not concerned about the risks of security exposures as it was not their accountability.
- The SIG positioned themselves as pure mercenaries with no intrinsic interest in the project; they wanted to do as told by the OG.

Analysing the problem further led to the following clarified understanding:

- TNC infrastructure must be prevented from getting infected by malware coming through the IHC platforms. Therefore the IHC platforms must be protected from getting infected by malwares.
- The vector through which the IHC platform could get infected is the IHC devices. When the IHC devices download unsafe application, the malware in them could infect the IHC platform. To secure the IHC platform from such infections, the IHC devices must be allowed to download only safe applications.
- A tell-tale sign of the unsafe application is that it downloads new additions without the user's authorisation. To protect from unsafe applications, users could be asked to explicitly authorise any downloads and advised to seek tech support when in doubt.

With this improved clarity of the problem, the problem could be framed as:

> *To reduce or eliminate the risk of malicious software being downloaded from the Internet onto IHC devices without the user awareness thereof.*

Siva decided to allow time for clarity of aim to emerge in a way that would increase the likelihood that it would be collectively owned. As appropriate in AR processes, Siva wanted the stakeholder groups to take ownership of the problem-solving process. To facilitate this, he would have to contextualise the problem in terms of how similar problems in other theatres had been solved. This contextualisation, he hoped, would facilitate collective action towards a mutually-acceptable solution.

6.4 The First Spiral of Action

The first spiral of the IHC project took place between 02 May and 21 May 2008. During this period, all the planned actions were executed and the entire turn of events was documented. Table 6-2 provides a summary of the actions and outcomes.

When Siva talked to the team members, individually and collectively, to explore the landscape of the problem, the teams reverted to their preferred positions (habitus) and were passively resistant. The teams did not have an appetite to explore and understand the aim in detail. The SG and the SIG always gravitated to positioning the platform behind a firewall and were reluctant to explore other options. The team's predisposition was clearly attributable to their belief that the aim / objective of the project which was to secure the IHC infrastructure and that the best way to secure it was to place it behind firewalls.

Focus Area	Actions	Outcome
Change mental models	Understand the mental blocks and recognize systemic limitations. Position task as a challenge by appealing to the professional pride of stakeholder groups. Provide psychological safety to team members by:(a) shielding the team from organisational fall-out when exploring and adopting new approaches; and (b) provide explicit and implicit reassurance that the risks of trying out new options will be tolerated and risks will be fully underwritten by Siva.	The *habitus* of the stakeholder groups proved to be a formidable barrier to action. Fear of taking on the OG was immense. The first round of appealing to professional pride, and facilitating focus on a solution, did not yield results.

Keep the focus on goal and vision	Facilitate the team's deep understanding of the problem. Abstract and contextualise the problem for better comprehension and positioning of expectations. Recurrently reconfirm understanding and alignment to the final goal.	Emphasis on problem framing and goal clarity did not yield the desired result. Resistance to participation in the project was too high. The impetus to relocate the platform behind the firewall - a vanilla / defensive solution – was strong amongst most groups. However they knew that the implementation of this solution would be a political challenge. Thinking and ideation were carried out ritualistically without genuine engagement. There was no creative abrasion.
Leadership Practices	Promote understanding the problem through exploration and research. Underwrite risk of any failure due to genuine commitment to finding an effective solution. Shield the team from deadline and cost pressures	As the attempts to promote deeper understanding of the problem within the teams did not succeed, and the teams were very reticent, opportunities to express risk underwriting and shielding the teams from cost and deadline pressures did not arise. Not creating an opportunity to offer protection against risks is a lapse on the part of local leadership. This set of planned actions could not be executed.
Observe Learning and New Knowledge Creation	Observe the outcome	The first spiral did not yield any significant learning or new knowledge among the teams.

Table 6-2 Actions and Outcomes for Spiral 1

Siva tried to facilitate Reg's understanding of the problem from multiple dimensions but this attempt did not succeed. Reg, the project lead, was not at all keen on working in the project; he felt that the solution was obvious and that the infrastructure should be moved. Attempts to contextualise the problem with earlier success stories did not change Reg's position. Similarly, the attempts to get Reg to learn about the IHC product and its underlying technologies also failed.

Siva attempted to kick-start the thinking process through a solution workshop where he doubled as the facilitator. During the solution workshop, the SIG individuals were very reluctant to participate and implied that the solution is the OG's problem and the OG had to decide if it wanted to fund the cost of moving the infrastructure and own any operational risk such a move might create. The SIG refused to come to a position on the feared operational risk. Reg acted as a passive note-taker who was happy to summarise the outcome rather than lead the design debates. All attempts to induce debate on the problem at hand, the solution options, and understanding of the available documentation on the technology, failed.

Siva called for another workshop, this time with IHC to draw on their rich international experience, to derive an appropriate solution for TNC. After protracted delays by a reluctant Reg and SIG, the meeting with IHC was held. During the meeting IHC vacillated and could not confirm or deny whether the relocation of the infrastructure would cause performance problems. IHC advised that TNC try out the move and decide for itself.

The SIG ruled out trying out the relocation of infrastructure on logistical grounds. Siva floated the idea of ring fencing the existing infrastructure from the rest of the network but SIG were reluctant to explore this option as it called for coordination with the Engineering House (EH), a group with which SIG had poor relations.

As a follow up to these solution workshops, the OG stakeholder met Siva to warn that the OG would veto any attempt to move or ring fence the infrastructure, citing feedback from its industry contact.

During the course of this spiral, Siva was not totally detached and objective and he became a victim to the pressures of politics. He failed to offer risk underwriting to the teams. Since this was not done, we are not sure what would have been the altered outcome of that offer and how it would have affected the outcome. This key observation taught me an important lesson that the objectivity of the AR practitioner, - being able to stand apart as well participate in the flow - is a tough act that require strong mental alacrity. I had to learn these skills more.

6.4.1 Application of Action Research Principles

Table 6-3 below, summarises the observations of AR principles observed during the spiral.

AR Principles	Observations
Reflexive Critique Teams reflect on issues and processes; make the concerns, biases, assumptions and interpretations explicit.	This was not effectively applied. The teams were very close minded and entrenched in their positions. During this spiral, Siva had to strategise to remove impeding teams and prime the SG team to work with open mind.
Dialectical Critique Team members engage in dialogue with each other to validate the reality in its context.	This did not happen
Collaborative Resource Teams treat each persons' idea equally significantly and learn from contradictions; synthesising (Nonaka 2003) into a single view point.	The team behaviour did not reach this state during this spiral.
Risk Challenge to status quo introduces risk of ego, fear of failures. These fears are allayed by local leadership and learning facilitated.	Local leadership missed out in removing the fear of risk from the groups at the first instance. Perhaps that could have altered the mindsets of OG and SIG and thawed SG. This was a lapse on the local leadership.
Plural Structure Ability to maintain and document healthy ongoing discussions until final conclusions reached (provides for future reflections).	This did not take place.

Table 6-3 Application of AR Principles in Spiral 1

6.5 Learning from the First spiral

6.5.1 Observation on Alignment to Theories

Table 6-4 below summarises the observation of the underpinning theories behind this research during this spiral.

Theories	Observations
SECI – *Ba* (Nonaka 1994) shared context in motion	Did not observe.
Social Capital (Nahapeit & Ghoshal 1998) network of relations and the assets mobilised by it.	Once the reluctant teams OG and SIG were isolated, the SG team started forming network or relations internally within themselves and externally with vendors and industry peers.
Practice Theory Features Practical Skills (Whittington 1996) Practical Wisdom (Nonaka 1994) In situ coping (Raelin 2007)	The local leadership very consciously adopted this approach without getting emotionally tangled with a set of processes or precedence; but it failed in removing the risk from the teams to observe the impact of that practice against very entrenched politically powerful groups.
Leadership Styles Leadership style varies in different contexts (Chia 2004)	Leadership style throughout the spiral was one of getting the teams to engage in solving the problem.
Cultural Transformation Critical social theory (Bohman 2008; Leonard 2004)	None observed.
Theory, Practice, Transformation How practice and theory recursively reform each other leading to transformation (Praxis).	None observed.

Shared Leadership	None observed.
Hermeneutic Principles in Data Analysis	Not observed.

Table 6-4 Alignment to Theories in Spiral 1

6.5.2 Learning Outcome

Siva realised the intractability of the stakeholder mindset / mental models that had been sculpted by the fears of failure and political fallouts. Teams were reluctant and were drawn into their shells in their own silos. Nevertheless there was evidence of minor thawing; the participants from SIG and SG were seen asking probing questions during the IHC meeting to understand the finer details of the technology. It seemed that the professional in them wanted to learn but their habitus was inhibiting this process. Siva decided to leverage this insight in the next spiral of action.

6.6 Re-strategising for the Second Spiral

From the learning of the first spiral, Siva decided to focus on building a team with complementary and compensating points of views, skills and competences and remove teams with counterproductive political agenda.

To aid in the team formation, Siva identified two other resources who had expertise on IHC (from a support perspective) to work with Reg as thought partners. Siva also leveraged contacts within IHC for Reg to gain access to technical details bypassing the usual channels of SIG. Since the OG was dead against any solution excepting lifting security controls and SIG is willing to follow this line, Siva decided to exclude OG and SIG from the team. Once a few viable solution options were available, he wanted to negotiate with OG and SIG for implementation.

Since Siva observed some probing questions from the team on IHC technologies in the earlier spiral, he wanted to push the team into learning more about the problem and its domain. To achieve this, he chose to appeal to the inner professional within the team members.

Siva decided to work harder at persuading Reg to take the lead in developing the solution. Siva had a hunch that the solution to the problem could not be that complex, as IHC had deployed a similar solution all over the world and there had to be a way of doing it in Australia too. So, as a precursor to solution development, Siva decided to encourage Reg to build knowledge about the IHC products and the solutions it has deployed in different parts of the world with the support of the team Siva will be forming.

Table 6-5 provides the summary of actions planned by him for Spiral 2 of the AR process.

Focus Area	Key Factors	Actions Planned
Team Behaviour	Create apolitical team with environment conducive to learning.	Form a project team eliminating groups with political agenda and inducting resources to bring heterogeneity of views, skills and competences.
	Clarify and crystallise the project objectives.	Analyse and understand the problem from multiple contexts. Framing the problem accurately to pursue solutions.
Leadership Behaviour	Promote learning and knowledge development in the problem domain.	Underwrite the risk of failure. Shield the team from organisational politics. Shield the team from deadline and cost pressures. Build a social environment of strongly bonded and collaborative team.
	Promote collaborative problem solving.	

	Position task as reward – appeal to the intrinsic motivation of team members to engage in problem solving as an expression of professional competence.	
Knowledge Creation	Promote learning and knowledge creation.	Encourage the team to embark on understanding the problem, identify areas of exploration, explore, and build requisite new knowledge.

Table 6-5 Formulated Actions for Spiral 2

6.7 The Second Spiral of Action

The second spiral lasted for the fortnight between 23 May 08 and 30 May 08. During this spiral all the planned actions were executed and their effects studied and documented. Table 6-6 provides a summary of the actions and outcomes.

Focus Area	Actions	Outcome
Promote learning and knowledge building	Consciously encourage ideation and the accumulation of knowledge in the space. Cross applying knowledge from related domains.	After some initial resistance, Reg took up to building knowledge and in that process engaged the rest of the team, this task was successful. The team developed knowledge in the domain that enabled them to see the problem in a different light. The team was ideating and collaborating between themselves, vendor resources and their industry peers to refine their understanding and improving the solution options.
Leadership Practices	Promote active ideation and creative abrasion through (a) engagement in	The team (represented by Reg) and Siva had several discussions in comparing and contrasting

	explicit ideation, (b) promotion of dispassionate debates and (c) objective triaging of solution options. Consciously avoid using the terms "innovation" and "creative solution" during discussions.	the ring fencing solutions and other solution options the team was putting forth. The creative abrasion and objective assessment of options led to embracing the most creative solution that could be implemented with little cost and time whilst mitigating all the underlying risks. .
Observe Learning and New Knowledge Creation	Make observations	The teams learnt the details behind the IHC implementation by studying the manuals, understanding the configurations and discussing with industry peers and vendors. Mutual discussions and minor trials helped them gain confidence and mastery of this knowledge. Collaboration aided in enriching the knowledge and crystallising the understanding. The team was able to ideate more effectively resulting in original and innovative ideas.

Table 6-6 Actions and Outcome of Spiral 2

Siva was aware that Reg's technical capabilities offered a potential way of breaking the decision-making stalemate that had arisen. In this respect, Siva planned the following actions:

- To re-discuss the objective of the project with Reg to ensure complete clarity on the objective;
- To encourage Reg to gain greater understanding of the IHC technology, specifically the deployment aspects in detail;
- To encourage Reg to work closely with two thought partners to derive a solution; and
- To socialise any potential solution delivered by Reg and his partners among the entire stakeholder group with a view to getting them to collaborate on the solution.

On the first day of the second spiral, Siva engaged Reg and advised him to explore and understand the technology of IHC. Reg became defensive and declared that this was neither his job nor his expertise and accused Siva of setting him up for failure.

When Reg resisted engagement in the IHC project, Siva drew parallels between the proposed task with earlier successful works that Reg had undertaken, such as developing surveillance and monitoring tools to monitor TNC infrastructure. He drew Reg's attention to the value of learning new domain skills and reaffirmed his faith and trust in Reg's ability to understand and resolve the IHC problem. Furthermore, he explicitly underwrote any risk of failure on this tasks, offered to rate Reg's performance on the effort he put into exploring the IHC technology rather than the outcome the activity produced. This appeared to calm Reg down although he remained unconvinced. Siva and Reg debated the using of ring fencing solution option and Siva offered to taken on any political fallout himself. The debate was feisty but very objective; several shortcomings of the solution were highlighted. Finally Reg wanted the decision be held back until he explored more options.

Reg set out to learn about IHC and Siva offered two days of work from home to facilitate disturbance-free learning. On the second day, excited Reg called Siva and explained an option that would eliminate the risk of downloading software from Internet without the users' knowledge through some minor configuration setting. He started putting forth several ideas to prevent the users from downloading inappropriate software. Reg agreed to meet Siva the next day with firm solution proposals.

The next day Reg, armed with his newly acquired competence on IHC technology, commenced a discussion with Siva with a question:

> *"Why should we move the IHC infrastructure? Why could we not eliminate the underlying risk instead?"*

Reg wanted to pursue the following course of actions.

- To eliminate the risk of software being downloaded on IHC without the user's knowledge, explore the option of explicitly getting user's password before any application could be installed.

- To prevent the users from downloading inappropriate software that might impact IHC infrastructure, explore the option of providing a set of approved software on the IHC platform for the users to download.

If the two solution approaches were successful it would eliminate the risk of IHC infrastructure becoming infected, and, thus, the infrastructure could remain in its current location and even the ring fencing solution option would be unnecessary.

6.7.1 Broadening Collaboration

Reg was actively discussing and debating the potential solutions with members of the other groups over the following week. The team was learning from each other and by experimenting with potential solutions. Towards the end of this period, informal trials were conducted that showed promise of a viable solution.

6.7.2 The Trial

Armed with the newfound confidence, Reg negotiated with his SIG counterparts to configure a test environment on IHC infrastructure and carry out a pilot trial of implementing the identified solutions. As expected, the trial was successful and the solution involved simple configuration changes that cost practically nothing in terms of time and money. Immediately all the objections that had come from the various stakeholder groups vanished. The problem had been comprehensively addressed and SIG was ready to roll-out this solution.

6.7.3 Application of Action Research Principles

Table 6-7 below summarises the observations of AR principles during this spiral.

AR Principles	Observations
Reflexive Critique Teams reflect on issues and processes; make the concerns,	The SG team (with its extended group of vendors and industry peers) was actively engaging in reflexive critique by discussing and debating concerns and assumptions without reservations.

biases, assumptions and interpretations explicit.	
Dialectical Critique Team members engage in dialogue with each other to validate the reality in its context.	The SG team was actively engaging in this behaviour as evidenced from the discussions of second spiral.
Collaborative Resource Teams treat each persons' idea equally significantly and learn from contradictions; synthesising (Nonaka 2003) into a single view point.	The output of the team was the result of collective action. Ideas were discussed, refined, trialled and re-refined until workable options were arrived at.
Risk Challenge to status quo introduces risk of ego, fear of failures. These fears are allayed by local leadership and learning facilitated.	In the SG team only Reg required risk underwriting as he alone was accountable for the outcome and other resources were project level assemblages, they had no skin in the game. Thus when risk was underwritten for Reg his engagement and hence the team's engagement improved and they collectively produced an innovative outcome.
Plural Structure Ability to maintain and document healthy ongoing discussions until final conclusions reached (provides for future reflections).	Observed and is documented under second spiral.

Table 6-7 Application of AR Principles in Spiral 2

6.8 Learning from the Second Spiral

6.8.1 Observation on Alignment to Theories

Table 6-8 below summarises the observations on the underpinning theories behind the research during this spiral.

Theories	Observations
SECI – *Ba* (Nonaka 1994) shared context in motion.	During the second spiral, the SG team and its extended participants operated on a shared context and were building on it.
Social Capital (Nahapeit & Ghoshal 1998) network of relations and the assets mobilised by it.	Social capital was well defined and established with the SG team engaging in strong internal relationships and robust external relationship and leveraging both the networks through collaboration demonstrated social capital at work.
Practice Theory Features Practical Skills (Whittington 1996) Practical Wisdom (Nonaka 1994) In situ coping (Raelin 2007).	Compared to the first spiral, the local leadership was more conscious in adopting this approach without getting emotionally tangled with a set of processes or precedence and objectively pursued the goals.
Leadership Styles Leadership style varies in different contexts (Chia 2004).	Leadership style changed from one of coaching and priming the teams in the spiral 1 to that of active project leader style in the second spiral.
Cultural Transformation Critical social theory (Bohman 2008; Leonard 2004).	Team moved from being reluctant to engage to be fully engaged. The team spent time to explore and understand the IHC technology. The team was able to take risk and debate merits and demerits of solution options passionately.
Theory, Practice, Transformation How practice and theory recursively reform each other leading to transformation (Praxis).	This was not sufficiently observed.
Shared Leadership.	The management style of Siva where he treated Reg (SG team) as equal and subject matter expert established a shared leadership framework. This is corroborated in the post implementation review..
Hermeneutic Principles in Data Analysis.	Not observed in this spiral.

Table 6-8 Alignment to Theories in Spiral 2

The success of this project centred on the understanding the problem and framing it appropriately. The redefinition of the originally stated problem set the tone for solution options that eventually were very innovative. To get the teams to learn, develop knowledge on the problem domain and explore non-status quo options required sustained leadership input, especially during the team formulation, working the mental models through risk and rewards and provisioning avenues for collaborative learning. I shall discuss the details of the learning in this spiral as a part of Summary of Learning from the Project in section 7.10.

6.9 Post Implementation Review

A post implementation review (PIR) of the project was conducted by Professor Ken Dovey, Siva's academic supervisor. As part of the review, he interviewed Reg with the intention of accessing Reg's perspective on the events outlined above. The interview was recorded and the transcript is provided in Appendix 12.2. The Post Implementation Review yielded an interesting insight into the importance Reg placed on the leadership practices that supported the innovation process.

A major thread that emerged throughout the interview was the importance of trust and the fear-free working environment provided by Siva. In the words of Reg,

> *I had stand ups with him (Siva). I had blazing rows with him. But we both respect that each one has different opinions. Later we shake hands and go for a coffee again. We all speak our mind to each other in the office. No one; I don't know of anyone who holds back. That's how we have our interactions done (demonstration of creative abrasion).*

Within this work environment people were able to be honest and to confront each other with no negative consequences. Furthermore, Siva's effective lateral power management and his commitment to knowledge network facilitation were acknowledged by Reg as practices that create the requisite freedom and trust for ideation and creative problem-solving:

> *Well, he never sits himself between me and whomever I am working for. He'll always say that this is whom you are dealing with and I'll build my network from there.*

Whilst Reg never explicitly acknowledged the importance of underwriting the risks, he acknowledged the importance of creating a working environment that shielded him from other organisational political fall-out. In his words,

> *…I need a shield from all the other unpleasant **** that goes on in the other side. And he is an excellent manager for that.*

The PIR confirmed the importance of local leadership practices in the generation of creative ideas and their conversion into innovative solutions to complex problems. In particular, two leadership practices are highlighted for their significant contribution to the innovative solution realised in this project:

- The creation of a social environment characterised by trust, honesty and the freedom to experiment without fear of the consequences of failure; and
- Removing the risk from the staff i.e. buffering the staff from the negative politics and organisational pressures to allow them to exercise their creativity unfettered by such concerns.

6.10 Summary of Learning from the IHC Project

The project provided rich learning about the processes of innovation happening in a project. In particular, the following key learning stood out:

6.10.1 Problem Understanding and Framing

The original definition of the problem was deceptively accurate and any revisions to it appeared counterintuitive. For the problem that the IHC infrastructure was not protected from Internet downloads, the obvious solution was to protect it with firewalls. When this was not accepted, the team was vexed and did not want to progress. Siva decided to employ the learning from Ohmae (1984) and Ohno Circle (Liker 2003) in this situation, he encouraged the team to explore the problem in greater, from multiple angles and understand without any preconceived expectations. As pointers on what the team should learn, Siva encouraged

them to understand the IHC technology, deployment models and case studies of deployments in other corporations.

The team was reluctant initially and Siva had to appeal to the professional ego and recount earlier successes through similar research and understanding, to get the team going. As a sop, free time to work from home, a facility held in highest value by Reg was offered. Finally the team commenced learning about the IHC technology and its deployment details.

As the team learnt about the configuration capabilities of the IHC, Reg stumbled upon a configuration option that led him rethink the problem and reframe it. The problem was reframed from protecting the IHC infrastructure to preventing unapproved downloads to IHC devices. With this reframing of the problem, the solution options were significantly different, the objections of the stakeholders evaporated and the solution deployed was hailed innovative by TNC.

6.10.2 Creating a Supportive Environment

In the initial stages of the project, the teams were very reluctant and disengaged. Often project managers give up at this stage and ascribe it to organisational culture. Instead, Siva invested substantial time and effort in working the underlying reasons behind the resistance and altering the culture of the team from being defensive to be being open minded and exploratory.

Local leadership played a crucial role in creating an environment in which the group members could perform at their optimal levels without fears of political impediments. Siva consciously excluded OG and SIG from the team carrying out solution exploration and the team comprising SG, vendor experts, TNC support staff and industry peers began to perform harmoniously.

In handling Reg's resistance stemming from habitus, Siva dealt with it without dismissing Reg's assumptions but acknowledging them and quantifying the risk with facts. Siva used the history of Reg's achievements in similar scenarios in the past, as additional reinforcements. Siva demonstrated leadership commitment by underwriting the risks and offering to evaluate

Reg's performance on his effort and commitment rather than the outcome. At no time, the local leadership steamrolled the problem or pulled ranks, but treated the team as equals and engaged in coach like leadership style.

6.10.3 Comparing with CBOY Project

Leadership styles employed in IHC and CBOY projects were very similar; it started with initiation style and ended up in consideration style. The leadership was switching between the styles as the situation demanded i.e. being task or employee focussed. The teams in both projects were reluctant at the start, and risks to the teams had to be explicitly underwritten, the team environment had to be made very facilitative and the teams had to be guided into learning and knowledge building. In both of the projects, once the teams embarked on learning and understanding the problem in greater detail, they redefined the problem. The innovative outcome appeared to be dependent on this improved understanding of the problem. The understanding of the problem in both the projects was the tipping point. It was at this point in both the projects, the teams took the lead and the leadership model inverted and the leader became a facilitator to the teams; the leadership style was transformational and servant.

Though in principle the leadership practices used in each project were similar, the techniques used or the way the practices were administered in the respective projects varied with the social dynamics of the team. In CBOY, risk elimination was sufficient to get Jim engaged, whereas Reg required reassurances on his performance evaluation. Jim needed a partner to work with and Luc was organised whereas Reg is a loner who prefers to work alone until he gets the measure of the problem at hand before engaging others, so the sop of working from home was used. This adaptation of the principles of actions to suit the context supports the assertion that these leadership inputs are *practices*.

CHAPTER 7: DATA ANALYSIS AND DISCUSSION

7 Data Analysis and Discussion

In this chapter, I present my analysis and discussion of the field work data. The mainly qualitative data includes interviews with key personnel, transcripts of key meetings and notes recorded in project diaries. My findings are then compared with those highlighted in the literature review presented in Chapter Two.

7.1 Recap of Fieldwork Results

In the innovative projects, CBOY and IHC, the project teams had to develop requisite knowledge to frame the problem accurately before embarking on solving it. In both of the projects, the problem each team originally started to address was significantly different to the problem they actually solved. During this journey, the local leadership encouraged the teams to be 'open-minded' when exploring the problem and to engage in learning in order to develop the new knowledge required to understand and solve the problem. Once the teams could understand the problem adequately, they were able to come out with appropriate and innovative solutions. In the failed DAM project, though the problem was new to TNC neither the teams nor the management (local and executive) made any attempt to understand the problem in full, leading to a failed outcome.

From the field work results, four key leadership practice themes emerge namely:

- Formulating effective teams and facilitating open minded enquiry
- Managing risk and pressures on the team
- Promoting problem solving through problem understanding; and
- Encouraging learning and knowledge creation.

Through these local leadership practices an environment is created in which teams can explore the problem with an open mind and trial innovative options without the fear of failure. This creation of a micro-environment (an ecosystem or localised culture) is conducive to learning, exploration and knowledge creation. However, the local leadership does not execute these

activities as process steps to be followed but offers them intuitively - as part of their usual repertoire of coping with challenges - as heuristics that can be adapted to the situation and used appropriately, and never as scheduled activities. In the following sections, I offer a detailed discussion of each of these leadership practices.

7.2 Formulating Effective Teams

Team formulation was accorded little importance in the DAM project despite the project having a very complex stakeholder structure and multiple silo-organisations as stakeholders in, and contributors to, its success (refer figure 4-1). Project House (PH), although in the project leadership role, did not attempt to forge a cohesive project team. It only identified the domains that should be represented in the project and expected these domains to integrate their individual outputs into the final solution without any facilitation from them. As a consequence, the different domain leads in the project approached each other as adversaries, showing open and vocal mistrust of each other:

> *"Siva, BA and DR are out to get IT (department), the project will not succeed, they will torch IT. Do not trust them."*
>
> *(RJ, IT PM Sep 3 2008 – Research Diary, DAM Project)*
>
> *"IT (department) is taking us for a ride, Siva. IT has nothing to develop; they should not charge us. They are out to get us."*
>
> *(BA, GM of PH Sep 11 2008 – Research Diary, DAM Project)*

Neither the executive nor the local leadership addressed these underlying tensions between the stakeholder groups. They were never brought out into the open and discussed at project meetings and, thus were never resolved. Conversely, in the IHC and CBOY projects, the team members inducted from other domains to support Reg and Jim were chosen for their capability fitness, compatibility and ability to work together creatively. Furthermore, they were chosen to complement Reg and Jim in skill-set, experience and disposition. In both these projects, the OG team, with its negative political agenda, was carefully excluded from the team. The following extracts from the research diaries reflect this.

> *Siva advises Jim to engage Luc from SIG to work with him in this activity as a thinking partner. Luc and Jim have mutual respect for each other's competence. Whilst Jim is a suave 'customer presentable' professional, Luc is a typical back room programmer. Luc is brilliant in his craft and can trial any complex concept innovatively but is more known for his irascible temper and for being very temperamental. By role Luc was a system administrator but by skills he was a highly skilled IT security professional. As SIG are a different division, Siva makes arrangements with SIG managers to have Luc work with Jim.*
>
> *(May 27 2008 – Research Diary, CBOY Project)*

In the IHC project, the team was formed with a lead (Reg) who had no domain knowledge on the IHC but had demonstrated skills to self-learn any complex technology and reach expert status in a short time. To complement Reg's skills, others with different facets of IHC skills, were inducted into the team.

> *… Siva introduced Reg to IHC customer support technicians and their manager. This was done to provide a network for collaboration.*
>
> *(May 06 2008 – Research Diary, IHC Project)*

Table 7-1 summarises the key differences in the characteristics of the teams formed in the three projects.

Successful Projects (IHC and CBOY)	Unsuccessful Project (DAM)
Teams were viewed as constituted by individuals with emotional dispositions, skills and experience.	Teams were viewed as an impersonal assemblage of skills.
Collaborative capabilities of individuals were viewed as being more important than their skills.	Individuals' skills were considered paramount; compatibility and collaborative capabilities were viewed as unimportant.
Heterogeneity in the team was engineered through the systematic assemblage of complementary and compensatory knowledge, capabilities and skills.	Heterogeneity in the teams was limited to the representation of different domains or organisations in the project.
Planning and facilitation of collaboration was done proactively by the local leadership.	Collaboration was positioned as the accountability of the various groups.

Table 7-1 Differences in Team Characteristics

These leadership practices around the insightful composition of a project team played an important part in the generation of ideas and their conversion into innovative outcomes of value to the stakeholder community. In both of the innovative projects, teams were assembled that were attitudinally and culturally aligned but which also possessed complementary skills and mind-sets. This is similar to what Peck (1987) referred to as 'productive communities' where the synthesising of, and building on, each other's ideas translated individual knowledge into organisational knowledge. It also resembles the knowledge creation practices discussed by Nonaka &Takeuchi (1995), and the concept of a 'learning organisation' introduced by Senge (1990).

7.2.1 Heterogeneity in Teams

Heterogeneity in teams brings about diversity in thinking and brings about alternative viewpoints, which when synthesised produces new knowledge leading to innovation (Nonaka& Takeuchi 1995). Citing the communities of San Francisco (liberal arts) and Silicon Valley (technology innovation) as examples of heterogeneity, Florida (2002; 2004) claims that the fresh mindsets and new perspectives that social diversity brings to a community spurs creativity. With regard to project teams, Sethi et al. (2002) argued that heterogeneity in teams is achieved through representation of domain specialisation within teams.

This research indicates that creating a *productive* heterogeneity (a heterogeneity that is effective) within a team is a more complex task than these authors suggest. Promoting heterogeneity in teams involves balancing of skill, experience and disposition; it calls for subtle leadership practices (insights and actions) during the team formulation processes. As evidenced from excerpts from research diaries of the CBOY and the IHC projects, the teams were deliberately organised to be a mixture of individuals with complementary mind-sets and skills, who were also socially compatible. In both the projects, the formulated teams happened to be cross-divisional and cross-corporations (as they drew resources from outside TNC).

The IHC team was composed of:

> *…T(t)he lead Reg, who has a demonstrated competence to learn and gain mastery of any complex technology and is a keen explorer into the unknowns (once he likes it) but has no skills with respect to the IHC product;*
>
> *…T(t)he IHC customer support staff, who have the operational knowledge of configuring the IHC systems but not the deeper technical knowledge of the IHC technology, and have access to IHC vendor and its technical support resources;*
>
> *…T(t)he IHC vendor resources in Australia (corporation outside of TNC) that have the broad product knowledge, awareness of how their product is deployed in other corporations, and the connections to get at the required deeper technical details from within their company;*
>
> *SIG resources, who are managing the IHC infrastructure and have good familiarity with the IHC within TNC, are deliberately precluded from the team on account of their hidden political agenda and their incompatibility with the other team members.*
>
> *(Refer IHC Research Diary Background notes.)*

The local leadership practices encouraged support for the lead, Reg, from other members who could compensate for his weakness on the IHC domain and provide access to a social network that could be leveraged as needed. It was through these everyday practices that a workable heterogeneity was created within the team.

The CBOY team was composed of:

> *Jim, the lead who is an expert on Spam management, has good conceptualisation capability, is active in various internet and security forums, and has the ability to tap into resources from this vast network;*
>
> *Luc, who is a keen 'doer' and has worked with Jim in producing innovative malware and spam solutions in the past. Luc revels in trialling concepts quickly and is connected to a wide array of industry practitioners in security domains. He has mastered working the TNC systems without triggering TNC's complex organisational processes – a key asset in spam solution trials;*
>
> *Spam experts from the USA who are recognised as world-leading thinkers in this domain and who can provide conceptual guidance to the CBOY team.*
>
> *(Refer May 27 2008 – Research Diary, CBOY Project)*

Luc was inducted into the team, even though he worked for SIG, whilst other skilled IHC resources from SIG were excluded. Furthermore, global experts were enlisted to support and

guide the venture. Thus the local leadership consciously introduced a workable heterogeneity within the team.

These carefully engineered teams, comprising complementary skills and dispositions, performed as a cohesive unit and achieved the desired innovative outcomes. In sharp contrast, the DAM project relied on the constituent divisions to deliver on their obligations with no emphasis on forging a project team, let alone injecting heterogeneity in it.

The results of this study show that ensuring requisite heterogeneity in project teams is a primary leadership practice, and that the nature of such heterogeneity extends well beyond ethnicity and domain expertise. In fact, heterogeneity includes aspects such as the complementary skills and mindsets that facilitate collaborative learning and knowledge creation**.** This inference from the research is in line with the zone of proximal development and socio-cultural context of development, as identified by Vygotsky (1986).

7.2.2 Supporting Teams in Overcoming Organisational Resistance

In all three field work projects, the organisational *habitus* was observed to be a key factor behind the reluctance of the teams to engage with the issues. Organisational *habitus* (Chan 2003; Tatli 2010) refers to the manifestation of informal codes of action and interaction, organizational memory, history and culture. In the case of all three projects, fear – specifically of failure and its personal consequences – underpinned resistance to the risk-taking necessary for an innovative solution to be attempted. Overcoming this resistance required particular leadership practices – including acknowledging the risks, encouraging exploration with the view to developing new knowledge on the problem, underwriting all risk and shielding team members from organisational politics.

In the IHC and CBOY projects, key team members resisted engagement initially, expressing their fears openly to the local leadership:

> *We are had Siva (sic) (Jim meant that TNC is under spam attack). We have no other option except to increase our filtering capacity to match the spam volume. (Jim informally expresses to Siva that he is tired of engaging with OG and SIG to have solutions implemented).*
>
> *(Jim, May 27 &30 2008 – Research Diary, CBOY Project)*

> *Siva, I know nothing about IHC. It is not my job responsibility. You are setting me up to fail. I will not do it. (In actuality, he feared taking on OG and SIG with solution options)*
>
> *(Reg, May 02 2008 – Research Diary, IHC Project)*

In both projects, the leadership practices employed to address the organisational *habitus* included:

a. Acknowledging the problem and not dismissing it. Engaging with the team to understand the problems;
b. Creating openness to the problem by encouraging exploration of the problem and recent research on it. Consulting vendors on supplied details to bring about a quantification of the perceived risk;
c. Actively supporting the team's endeavours to find innovative solutions. This included the underwriting of risks and the encouragement of team members to view the project as a professional challenge (refer learning from second spiral in the IHC and the CBOY projects)

In stark contrast, in the DAM project unaddressed fear was evident in every facet of the project. The IT group feared that they would be made the scapegoats for the project's failure whilst PH feared that IT would bleed the project financially to death. Individually and collectively the leadership of each team knew the fear was a consequence of organisational processes and culture (e.g. IT and EH at loggerheads) but chose not to address this root cause of the fear. Conversely, in subtle ways, their practices amplified the fears of their team members (see Appendices 10.1 and 10.2).

In general, the mainstream literature on innovation (most of which is located within the positivist paradigm) has been silent on the issue of organisational *habitus* and its impact on the innovative capabilities. Neither the works of Amabile (1988, 1996, 1998, 2003) and Amabile et al. (2004) on promoting creativity and innovation nor the works of Edmondson et al. (2001, 2003) mention organisational *habitus* as a factor to be managed in promoting innovation. The closest these works come to acknowledging this issue is in discussing the role of managerial behaviour in creating a sense of psychological safety (Edmondson 2003), and the explicit methods a manager can adopt to promote innovative traits in individuals (Amabile et al. 2004).

The results of this research highlight both the importance and the characteristics of leadership practices in addressing the inhibiting influences of organisational *habitus*. Furthermore, the results shows that such practices are complex, require exceptional interpersonal skills, and recognise the political foundation of the organisation as a socially constructed reality.

7.2.3 Social Knowledge – in particular, the Knowledge of Team Members

One of the factors that underpinned the success of the IHC and CBOY projects was the formation of effective teams. It could be argued that the small size of the IHC and CBOY projects enabled the local leadership to have an intimate knowledge of the team members which is not always possible in large projects like DAM.

However, this is not entirely accurate because, in the CBOY project, the local leadership was only aware of the skills and competence of Jim. It was on Jim's recommendation that the next resource, Luc, was inducted into the team. The local leadership, as a matter of due diligence, reviewed the credentials of Luc for knowledge, skills and compatibility to work with Jim. Furthermore, the local leadership consciously stopped Jim from using SIG resources (who had related skills in spam management) on the grounds of the political agenda of that group; an agenda that was perceived as being counterproductive to the innovative solution to the problem sought by the CBOY team. The decision was not based on knowing individuals within SIG; rather it was based on an understanding of the competitive politics of the organisational reality.

Similarly, in the IHC project, the local leadership was aware of the skills and competence of only Reg. Through due diligence processes in team forming, the local leadership excluded the in-house personnel of OG and SIG on grounds of their destructive political agenda and enlisted people from the vendors (IHC) who had the targeted product-specific technical knowledge.

The results of this research show that in addition to having deep knowledge of key individual team members, the capacity to leverage existing social networks is vital in putting together an effective team. Furthermore, deep knowledge of the organisation and its competitive politics is essential in overcoming the cultural dynamics of resistance to change.

7.2.4 Facilitating for Open Minded Enquiry

In all three projects the teams were very closed-minded at the initial stages but in the successful projects local leadership nurtured an open-minded disposition.

> *Initially the DAM project team was very negative and declared that the project is intrinsically complex and nobody is sure of its details. The minor wrinkle in the regulations - the Australian customers have to opt into the product whilst the HQ customers were automatically included in the product and have to opt-out if they do not want to use the product – was touted as the biggest complexity. The teams drawn from every stakeholder group were uniformly negative and close-minded and were unanimous in their conclusion that the project was very complex.*
>
> *(Refer 15 May 2008 – Research Diary DAM)*

This unchecked negativity led the DAM project into a hiatus until September 2008. Even thereafter, the local leadership did not do anything to address this closed mindset. Conversely, in the CBOY and IHC projects, practices that facilitated solution-oriented curiosity and open-minded research that opened new approaches to viewing the problem and to finding more innovative solutions to it.

7.2.5 Summary on Leadership Practices towards Teaming

The results of the field work, articulate some of the key leadership practices required to form effective teams. These include: multi-dimensional optimising between the individual team members, managing task and the organisational dynamics; filling gaps in knowledge, skills and dispositions with appropriate resources; and promoting exploratory learning and relevant knowledge creation.

Mealiea & Battazar (2005) are amongst the few researchers who recognise the role played by local leadership in the everyday enactment of these practices. Their focus, however, is upon individual traits that contribute to successful team performance rather than the collective practices that this research highlights.

7.3 Leadership Practices towards Addressing and Eliminating Individuals' Risk

The data from the field work projects indicates that the perception of risk within the teams varied at different stages of the project and that, in general, such perceptions resulted in risk-averse behaviour. At the initiation stages of each project, the risk appeared driven by the organisational *habitus* and manifested as reluctance to engage with the problem. During the planning stages, as local leadership practices facilitated greater openness to the issues, individuals seemed to fear the political risks over which they perceived themselves as having no control. This manifested as reluctance to explore the unknown and the untried. At the execution stage, this aversion to risk appeared to stem from the fear of failure; in particular, the ignominy of their solution failing publically and the negative career consequences such failure could have for the individual.

The set of leadership practices that this research identifies as critical to the creation of an appetite for appropriate risk includes (a) removing risk from the team environment; (b) shielding the team from schedule and cost pressures; (c) buffering the team from organisational politics; and (d) encouraging teams to seek bold solutions. Each of these aspects is illustrated by reference to field data, in the next section.

7.3.1 Removing Risk from the Team Environment

The leadership practice that effectively addressed this inculcated fear of failure and risk-averse orientation was that of the leader *explicitly owning the risk* and encouraging the team to view the task as a professional challenge that carries no risk for its members. By local leadership owning the risk, the teams created a project environment characterised by openness to exploration, transparency of practice, and mutual trust. These intangible capital resources proved to be vital not just to the generation of creative ideas but also to the conversion of the best of those into an innovative solution.

As Edmondson (2001, 2002) has pointed out, in psychologically safe environments people believe that they will not be penalised for honest mistakes; nor will their colleagues and bosses think less of them for having tried but failed. Neither is there a social penalty for requesting help, information or feedback from others. This research shows that such environments also enable

team members to accept and offer meaningful critique. Furthermore, it shows that this consequently fosters the confidence to take more risks and, through reflective learning from such action, to generate new knowledge about the problem.

As observed in the three projects, the assumption behind who owns the risk in the project was a key driver of engagement within the team. In the IHC project, Reg, an individual with very open lines of communication with the local leadership, confronted the local leadership that he was being set-up to fail as he held the risk of failed delivery (refer IHC research diary). In the CBOY project, Jim, who had a more formal line of communication with the local leadership, was unable to think beyond defensive options (refer CBOY research diary). On both occasions the local leadership openly declared that it would own the risks and team members would be measured on their research efforts and the fresh options they could bring to the table (refer IHC and CBOY research diaries). The following statement of Jim from the post implementation review transcripts illustrates the value of local leadership owning the risk:

> *KD: OK, you mentioned it was an unconventional approach and there were risk aspects involved and it wasn't part of the mainstream …*
>
> *Jim: Yeah…*
>
> *KD: Approach? What gave you the courage to take this on?*
>
> *Jim: Um… probably, Siva's encouragement … (laughs) … and his take up of it.*
>
> *KD: What form did that encouragement take?*
>
> *Jim: Hmm … Basically the acceptance of the solution as a viable option, and …. and …to give the management support … and sponsorship to push it through.*
>
> *KD: So, as a matter of fact ….. in a sense he took ownership of the risk.*
>
> *Jim: Yeah. That's right. That's right. We will…. the way it's happened in the past…"*
>
> *(Post Implementation Review – CBOY Project)*

The teams in the IHC and CBOY projects realised that the local leadership had underwritten the risk not only through explicit statements but also through their active commitment to the project and their participation in understanding the problem and evaluating the options (refer learning from second spiral IHC and CBOY projects).

The leadership practices of DAM were quite the opposite. Leadership revelled in shifting the risk to the groups and held them responsible for the consequences of failure. In several meetings they openly threatened to close the project and blame its failure on a specific group. This led to the groups becoming more defensive and, eventually, to the project failing both on all counts.

> *"With this cost, I cannot go to ** (funding committee). I will be torched. I will simply go to the committee and say that based on the cost estimates of IT, the business case no longer stacks up and I will seek to close it."*
>
> *(Project Manager of DAM Research Diary – Sep 12 2008)*
>
> *BA was threatening to pull the project down on cost grounds and put the blame on IT.*
>
> *(DAM Research Diary – Sep 17 2008)*

Conversely, the IHC and CBOY teams realised that, in addition to its explicit ownership of the risk, the local leadership's active participation in all aspects of the project demonstrated its implied ownership of the risks involved. This was particularly evident in its active support in overcoming systemic and political constraints. Such implied ownership of risk by the leadership was observed to be more potent than explicit declaration of risk ownership alone. The teams in such risk-free and safe environments were able to launch into learning and experimentation without fear of failure.

While the mainstream literature identifies discrete factors such as leadership commitment, supervisory support and psychological safety as factors promoting innovation, it stops short of calling for the ownership of risk by the leadership as a key innovation-promoting factor. In her study of Canadian local government, Glor (1997) showed that leadership commitment was instrumental in motivating the team to innovate. Although Glor did not explicitly mention the issue of the risk being underwritten by the leadership, it is clear from her research that the tacit ownership of the risk by the leadership spurred the teams into action. Furthermore, Amabile (1996, 1998, 2003) lists supervisory support, shielding from pressures and positioning task as reward as some of the vital behaviours local leaders should exercise in promoting innovation. She argues that teams perceive these leadership behaviours to be risk-mitigating and hence supportive of innovation endeavour. Edmondson (2001, 2002, 2003) views such supportive supervisory behaviours as the method of provisioning psychological safety. In her case studies on hospitals learning to adopt innovative new cardiac operation procedures, the perception of

psychological safety by the teams increased their readiness to adopt these procedures, and to engage in knowledge sharing and creation activities which led to over-all organisational improvement. None of these articles, however, explicitly identify risk ownership as a factor that influences innovation in teams. In contrast, this research has explicitly identified the leadership practice of *risk ownership* as the single most important driver of creativity and innovation in the project teams.

7.3.2 Shielding the Teams from Schedule and Cost Pressures

All three field work projects were under immense schedule and cost pressures. In the two successful projects, cost avoidance was central to the CBOY project, and IHC was attempting to avoid expensive relocation of the IHC infrastructure. Both these projects were also facing strong time pressures: with every passing day without an effective solution, TNC was risking a mail system meltdown or malicious attacks on its core infrastructure through the 'soft' IHC infrastructure. Either of these outcomes would have resulted in operational outage of TNC business, leading to significant revenue losses. Similarly, the DAM project was intended to build a product capable of generating new revenue streams. Its cost pressures were driven by the need to keep the product profitable throughout its lifecycle, and its time pressures arose from the need to reach the market ahead of its competitors.

In spite of the commonality of the time and cost pressures, the local leadership practices employed to address these issues in the three projects were significantly different to each other. The local leadership practices in the DAM project transferred the cost and time pressures to the groups and threatened to hold them accountable for any overruns. On the contrary, the local leadership practices in the IHC and CBOY projects removed the cost and time pressures from the teams and left them only with the pressure of finding a good solution. As evidenced in the research diaries and post implementation reviews, there was no mention by team members of time and cost pressures. As is evident from the outcomes of these two projects, shielding teams from such pressures is an important leadership practice with respect to the encouragement of creative thought and innovative solutions.

7.3.3 Provisioning an Apolitical Environment with Open Communication

Creating an apolitical environment characterised by open communication is one form of provisioning psychological safety for team members. Within the IHC and CBOY projects, teams were able to debate issues honestly and fearlessly, and address any conflict openly as mature adults without fear of retribution. The following excerpt from the IHC project aptly communicates the nature of this environment:

> *Reg I had stand-ups with him. I had blazing rows with him. But we both respect that each one has different opinions … later we shake hands and go for a coffee again.*
>
> *KD The blazing rows have been about what? What sorts of things …*
>
> *Reg Always about policy things.*
>
> *KD About work related issues?*
>
> *Reg Oh Yeah.*
>
> *KD Never personality related issues?*
>
> *Reg "How the hell did you let it go through, there is no way we can do that!" This is me with a technical hat on. He will then go as to why from a political point of view, "There is no bloody way this is going to happen!" And then we will discuss it.*
>
> *KD So he has created an environment where people can be honest, confront each other with no consequences?*
>
> *Reg Yes. We all speak our mind to each other in the office. No one … I don't know of anyone who holds back. That's how we have our interactions done.*
>
> *(Post Implementation Review – IHC Project)*

In the DAM project, the contrary was true and it is evidenced from the following outburst/plea in a solution workshop that turned nasty:

> *Guys, can I make a point here please? I feel a bit offended or bit sad, because we are now trying to talk as, "IT said so; we are not doing so". After this meeting, the whole group, everybody around the table are going to sit together and do the project. For a moment, let's take the point and leave out the name IT or XX, We are one single goddamn company. Please. I request you. (Voice raises and turns emotional)*
>
> *(Transcript of DAM Solution Workshop)*

In positive environments of constructive communications, leadership practices are focused upon the resolution of the problem, and uncomfortable issues are not skirted around but confronted. In this way these practices facilitate the achievement of innovative solutions.

7.3.4 Encouraging Teams to Seek Bold Solutions

This was one of the key leadership practices that led to innovative outcomes in the IHC and CBOY projects. In the IHC project, Reg was repeatedly reverting to the obvious low-risk solutions of relocating or ring-fencing the IHC infrastructure. Similarly, in the CBOY project, Jim insisted on offering to the local leadership the low-risk option of deploying additional hardware. Though they were both aware that the solution options they were recommending were unlikely to be effective, they nevertheless recommended them to safeguard themselves from the risk of engaging alternative solutions that were new, bold, and untried by them. In both projects the local leadership tactfully pushed the teams into seeking bold solutions and exploring challenging options. To aid the teams into this behaviour, a key leadership practice within the CBOY and IHC projects was that of organising collaboration partners (vendor experts in both cases) and learning avenues for the teams to understand the issues well enough to be able to openly articulate them. In effect, this practice eradicated the fear of the unknown by re-conceptualising the problem as a professional challenge that could be solved by a team of professional knowledge workers (refer to spirals 1 & 2 of the CBOY and IHC projects). Once this inflection point was addressed and supported by concerted learning, the teams moved very easily to viewing the task as a challenge and an opportunity to showcase their professional capabilities through the finding of a bold solution to the problem.

Local leadership consciously avoided lecturing the team on risk taking or defining the notion of risk taking. Instead they tacitly, but very definitely, signalled that the status quo (conventional and low-risk options) was not an acceptable approach and signalled their appetite for risk in pursuing challenging and innovative solution options. Thus through leading by example, the local leadership inculcated in the teams, the importance of taking appropriate risks to be innovative.

The following excerpt from the CBOY project, illustrates this point.

> *Jim: Initially I wasn't pro putting it [the solution] in. ……*
>
> *My initial reaction was that it is not a mainstream technique used. „„„„*

It is a little bit of a 'security by obscurity' approach which we …… traditionally we go away from ….

So initially I had a fairly negative approach to it.

KD: Hmm. So help me understand how you got into such an unusual approach and you were initially hesitant as you said…

……..

Jim: Umm … probably, Siva's encouragement … (laughs) … and his take up of it. ….
Basically his acceptance of the solution as a viable option, and …. and … to give the management support…and sponsorship to push it through.

….

He is obviously is able to spot something of merit quite well. Sort of seeing the wood for the trees, so to speak. I think he has been pretty good at that anyway.

(Post Implementation Review – CBOY Project)

In the same manner, similar local leadership practices in IHC project led to the transformation of Reg, enabling him to move from his initial reluctance to actively exploring higher risk but more innovative solutions (Refer spirals 1 and 2 of IHC projects). However, the failed DAM project manifested no such leadership practices, resulting in the prevalence of negative and risk-averse dispositions across its constitutive teams.

7.4 Problem Solving through Problem Understanding

The research results reveal an interesting dichotomy in the way the problem was understood within the successful and unsuccessful projects. In the unsuccessful DAM project, the individual teams attempted to understand the problem by interpreting the specification documents alone. They made no attempt to understand the actual problem behind those specifications by talking to those who generated the specifications, or through their own research. This was apparent when the IT end-to-end designer, picking on the word "etc." in the requirements documents, ridiculed the specifying groups by exclaiming that no one could ever develop a system with such open-ended specifications. At the DAM solution workshop, when the business groups requested the inclusion of the data warehouse functions in the project, the IT PM without even attempting

to understand the requirement snapped that it could cost an additional $20M. In the next workshop, when the Marketing Group's analyst was asked to walk through the use-case, she broke down. It appeared as if the DAM project had a marked cultural proclivity for debilitating fear rather than understanding the problem details. Neither the executive leadership nor the local leadership within the DAM project cared to address this serious weakness.

In the successful CBOY and IHC projects, the local leadership consciously led the team to exploring the problem and understanding it in detail. In the IHC project, driven by his initial understanding of the problem, Reg refused to explore the reasons and rationale behind the need to move the IHC infrastructure to safe locations. Similarly, Jim in the CBOY project would not entertain any ideas other than increasing hardware footprint. In both these projects the teams, paralysed by *habitus* induced fear, resorted to "lazy" or "non-creative and ineffective" solutions. Through sustained local leadership encouragement and practices such as: (a) contextualising or framing the problem, (b) clarification of goals, and (c) engaging with the team to generate creative solutions, these teams were guided to understanding the problems holistically. Once this was achieved, their perceptions of the project requirements and the solutions altered dramatically. Reg, after this journey, asked excitedly, "Why should we move the IHC infrastructure? Why could we not eliminate the underlying risk instead?" This was the first step towards an innovative outcome. Similarly, Jim, in the second spiral of CBOY project, presented the existing spam solution at TNC and compared it to physical junk mail handling paradigms. He then put up four different solution options inspired by the physical junk mail handling methods to address the current spam problem. The most innovative option amongst the four was adopted by the team.

Through the local leadership practices of encouragement, the teams began to understand 'how to learn' about the problem and work towards a solution without any preconceptions or bias.

7.4.1 Goal Clarification - Facilitating Aim / Goal Clarity

Aim or goal clarity was an activity local leadership undertook to ensure that everyone in the team acquired the same frames of reference with respect to the aim/goal of the project. Ritualistically, the local leadership sought updated clarity in the opening and closing summary statements of the project meetings. While such practices were in place in the CBOY and the IHC projects –

resulting in the entire team gaining the same understanding of the problem and the actions to be executed (refer to IHC and CBOY project write ups) – in the DAM project the groups did not have clarity of aim or outcome in spite of having groups who were responsible for defining the product and for specifying its requirements (refer DAM project write ups).

7.4.2 Contextualisation – Framing the Problem

In order to facilitate broad thought about the problem - from multiple angles in order to get a holistic perspective - the problem has to be framed correctly and contextualised appropriately. Both contextualisation and problem framing are symbiotic, in that they feed off each other. In the CBOY project, the problem as perceived by the team was 'we have high spam volume, so how do we handle the volume?' If the problem were to be framed as a 'volume problem', the solution is always going to be capacity provisioning. To explore alternative views of the problem, local leadership compared it to junk mail. This contextualisation of the problem led the team to develop an alternate view of the problem, namely the delivery methods of the spam. This perspective led to a highly innovative solution to combat the spam 'volume'.

In the IHC project, the team perceived the problem to be that of 'securing the infrastructure'. By encouraging the team to understand the technology of IHC as well as other deployment scenarios, the team developed an understanding of the environmental factors which enabled them to contextualise the problem very differently. As a consequence, they re-framed the problem to be one of 'securing the download' instead of 'securing the infrastructure'. This re-framed problem statement led to a near cost-free innovative solution to the problem. To promote building from previously successful ideas, the local leadership recounted how the same team members innovatively solved similar problems in the past despite similar organisational resistance. Thus the practice of juxtaposing the problem with a similar problem from another context facilitated understanding the environmental factors involved. Similarly, recounting the cluey options from past successes, helped to re-frame the problem from the team's initial narrow conception of it, to a broader conceptualisation thereof. In the DAM project, however, despite rich data points in terms of two precursor products and a successful overseas launch, no such practices emerged with respect to the promotion of a deeper understanding of the problem.

7.4.3 Engage with the Team to Generate Creative Options

In the DAM and IHC projects, the local leadership was immersed in the problem and demonstrated their 'skin in the game' by actively working with the team in understanding the problem and evaluating solution options. In this respect, team members began to view this practice as a demonstration of local leadership's genuine commitment to the project team (refer to post implementation review transcripts). The shared frames of reference facilitated by this engagement enabled team members to communicate freely with the local leadership on solution options. Furthermore, the need for any form of upward management became unnecessary as the local leadership began to be viewed as a part of the team. There was a significant stage in both projects where the initiative shifted from the local leadership to the team. A distributed leadership or servant leadership model emerged in the teams; the teams were empowered to take the lead and were supported by the local leadership. These practices created an environment where each member of the team was able to operate creatively. In this way, the team discovered the real problems behind the stated problem and pressed for innovative solutions.

In summary, these sets of leadership practices - towards promoting deeper understanding of problem in order to drive innovative outcomes - have parallels in the literature. Kenichi Ohmae (1982) in his book 'The Mind of the Strategist' identifies that the first strategic step to be that of identifying the critical issue by framing the problem properly. He explains this concept with the problem of a company incurring high costs of overtime. Each of the questions 'How can we reduce overtime?' or 'Do we have enough staff?' or 'Do our staff have the necessary skills to do the work in a timely manner?' would elicit a different response. Clearly, though, it is necessary to start with the third question. The leadership practices of 'problem solving through problem understanding' identified in this research thus have their genesis in the strategy domain. Heath & Heath (2010) support this point when arguing that the problem is often dictated by 'what you want to interpret' and not by what is actually there. In this respect, Toyota Production Systems (TPS) realised the influence that mindsets/mental models have in problem perception affecting the problem framing, and attempted to overcome this constraint through processes like 'Genchi Genbutsu' and the 'Ohno Circle', where an executive would stand for an entire day silently

assimilating the turn of events (problems) around him to learn the reality of the problem and sculpt employees' mental models in line with that reality (Liker 2003).

7.5 Learning and Knowledge Building

The learning evidenced in the IHC and CBOY projects was not confined to the formal methods of learning, such as reviewing documentation or attending training courses. Rather, the teams went about building knowledge through: (a) self-initiated research, (b) collaboration with peers in related disciplines, (c) cross-applying knowledge from other domains and (d) learning experientially. Learning in the project, at least in the initial stages, was induced by the local leadership through practices aimed at overcoming the *habitus*-induced 'fear of failure' that had led the teams to the position of 'this is how things are done here'. In the IHC project Reg was encouraged to build knowledge on IHC technology and deployment details whilst in the CBOY project, Jim was encouraged to learn how the same problem was solved in other places and in other contexts. On the contrary, in the DAM project there was no attempt to identify and address the knowledge gaps by the local leadership. The project was providing a set of customer value propositions that were new to the Australian market, and neither TNC nor the DAM team understood them in sufficient detail. Thus the project teams were attempting to solve a problem that they did not understand. The project leadership never discussed the new customer value propositions with a view to understanding them better; and nor did they attempt to tease out any gaps in understanding. Instead they were focussed on delivering an assumed version of the solution at an agreed price on a committed date. As evidence to demonstrate this leadership mindset, during the second workshop of DAM, when attempting to learn the details behind the customer value proposition, the Marketing Group analyst was asked to explain the use-case for a particular scenario. In response, she broke down screaming, 'They are killing me! They are killing me!' The project leadership comforted the individual and left the question unanswered.

In the CBOY and IHC projects, the local leadership never expressly instructed the team to embark on learning and knowledge building activities; instead they acted as catalysts to the voluntary enactment of organisational learning. As covered earlier, these leadership practices substituted learning and knowledge building as positive drivers of project action rather than those of cost and time pressures. In this respect, Edmondson et al. (2003), postulates that building the

requisite new knowledge happens through a combination of decoding the tacit knowledge that exists within the team and/or gaining entirely new sets of knowledge. In line with this postulation, the local leadership in the IHC and CBOY projects facilitated learning and building of new knowledge by providing encouragement to the teams to explore by offering time off to work from home, organising collaboration partners, encouraging discussions with industry peers and providing constructive critique of tentatively offered solution options. Such local leadership practices created the social capital resource of *trust* – a resource that is vital to learning and the creative generation of solutions (Dovey 2009).

Nonaka (1991) identifies the middle management layer in organisations as the vital link between top and lower management, and argues that it serves as the key holder of relationship knowledge and the values that underpin a culture of learning. It is this culture, he claims, that is driving knowledge creation in Japanese companies. Extending this idea, Nonaka (1991), Nonaka & Takeuchi (1995) and Takeuchi & Shibata (2006) all posit that innovation is an outcome of the active creation of new knowledge, and its embodiment in new products and technologies. In this research, I observed that the local leadership practices played a very similar role in facilitating learning and knowledge creation within the teams.

7.5.1 Storytelling as a Knowledge Creation Heuristic

In the IHC and CBOY projects, the reviews were not carried out in a format that gave primacy to critical evaluation based on logical grounds. Instead the projects adopted a qualitative narrative style (storytelling) where experiences of team members in learning and discovering were shared, discussed and enriched through collective contribution. At every meeting (refer to research diaries and project spiral discussions), the local leadership commenced with a quick summary of the project's journey thus far. In this way the local leadership summarised the problem, the new discoveries (building of new knowledge), the current project status and the next steps to be taken. This was followed with a discussion of the experiences (learning and knowledge gained) by team members. The local leadership discouraged immediate criticism of experiences and/or the explanations that accompanied them, actively promoting contextual understanding and

empathic listening[11]. This method encouraged individuals to share their experiences in different contexts, and led to the team cross-applying findings from different contexts, in its collective attempt to solve the problem. Story telling avoided acrimonious debates intent on point-scoring (refer DAM workshop) and promoted the healthy cross-pollination of ideas. As an illustration of this behaviour, I present the following instances from the IHC and CBOY projects.

> *When Reg resisted engaging in the IHC project, Siva drew parallels to the task in hand and the earlier successful works that Reg had undertaken in developing surveillance and monitoring tools with respect to TNC's infrastructure. He drew Reg's attention to times when he had had to learn new domain skills to develop these tools. Siva reaffirmed his faith and trust in Reg's ability to understand and resolve IHC problems and explicitly underwrote any risk of failure on this task.*
>
> *(IHC Project Spiral 2)*
>
> *In the first spiral of the CBOY project, Siva reviewed the presenting problem in the context of similar earlier problems where characteristics of mail headers and reputation of sending sites were used to stop the spam. Siva and Jim tried to think aloud as a method of abstraction to position the problem. Once the problem was understood without its emotional baggage, Siva assured his (local leadership's) commitment to solving the problem. Siva did not resort to the rhetoric of innovation but guided the team towards it by reiterating the intent to find the ideal solution. In the second spiral, Jim talked in detail through the present spam protection infrastructure and of his experiences in attempting to find a solution. In doing so, he repeatedly compared the potential solutions to those of the physical junk mail handling paradigms. He floated four new options that could serve as interim solutions until the IP Profiling was developed.*
>
> *(CBOY Project – Research Diary)*

[11] Empathetic Listening is a technique which can help manage and avoid disruptive and assaultive behaviours. The technique can be summarized into five simple steps namely:

1.Provide the speaker with your undivided attention.

2.Be non-judgemental. Don't minimize or trivialize the speaker's issue.

3.Read the speaker. Observe the emotions behind the words. Is the speaker angry, afraid, frustrated or resentful? Respond to the emotion as well as the words.

4.Be Quiet. Don't feel you must have an immediate reply. Often if you allow for some quiet after the speaker has vented, they themselves will break the silence and offer a solution.

5.Assure your understanding. Ask clarifying questions and restate what you perceive the speaker to be saying.

In both these illustrations, the local leadership (as per their diary entries) did not realise that they were explicitly using storytelling techniques but had intuitively resorted to this technique to facilitate learning within the team.

7.6 Summary

Leadership practices executed in the innovative projects enabled the teams to understand the real problem behind the specifications. They facilitated a view from multiple perspectives and assisted the achievement of a holistic view of the problem. This helped in accurate framing of the problem – a strong antecedent for a successful solution (Ohmae 1982). The gaps in the knowledge required to solve the problem were identified and the requisite new knowledge was built. The team was guided to seek challenging and innovative solutions by ruling out status quo solutions.

In forming the teams, compatibility of mind-set and emotional dispositions were accorded the same importance as skills and competence. Heterogeneity in the team was achieved through a mix of these attributes and orientations. Furthermore, local leadership attempted to overcome the organisational *habitus* by encouraging open and committed enquiry; underwriting the risks involved in seeking bold solutions; shielding team members from organisational politics; provisioning an apolitical open communications environment within the project; and appropriately allowing the team to assume full responsibility for the solution (see Figure 7-1).

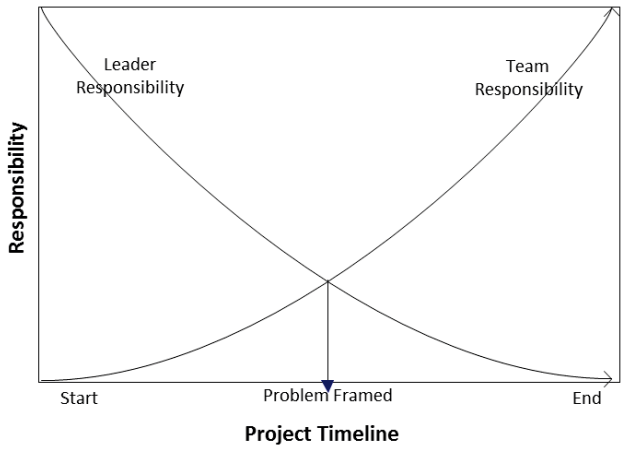

Figure 7-1 Transitioning Responsibilities between Leader and the Led

As a consequence, the leadership practices in the successful projects created an ecosystem within the project environment that was very different to that of the parent organisation. In this ecosystem, the pursuit of bold solutions overrode delivery pressures; risk was embraced in the interests of creating an excellent solution; collaborative endeavour replaced solo pursuits within silos; servant leadership practices were substituted for the conventional TNC 'command and control' leadership practices.

CHAPTER 8 – CONCLUSION

8 Conclusion

In this concluding chapter, I will be outlining a leadership-practice based view of innovation that has emerged from this research and discussing how such leadership practices manifest within a project environment. I will also raise the limitations of this research and suggest directions for further research.

8.1 Leadership Practices and Innovation

While the standard TNC project management methodology was used across all three projects and the initial mindset of the team members in each project was similar, what differentiated the projects in which successive innovation was achieved, was the nature of the local leadership practices manifested therein. This is outlined in Figure 8-1 which depicts the team behaviour within each project.

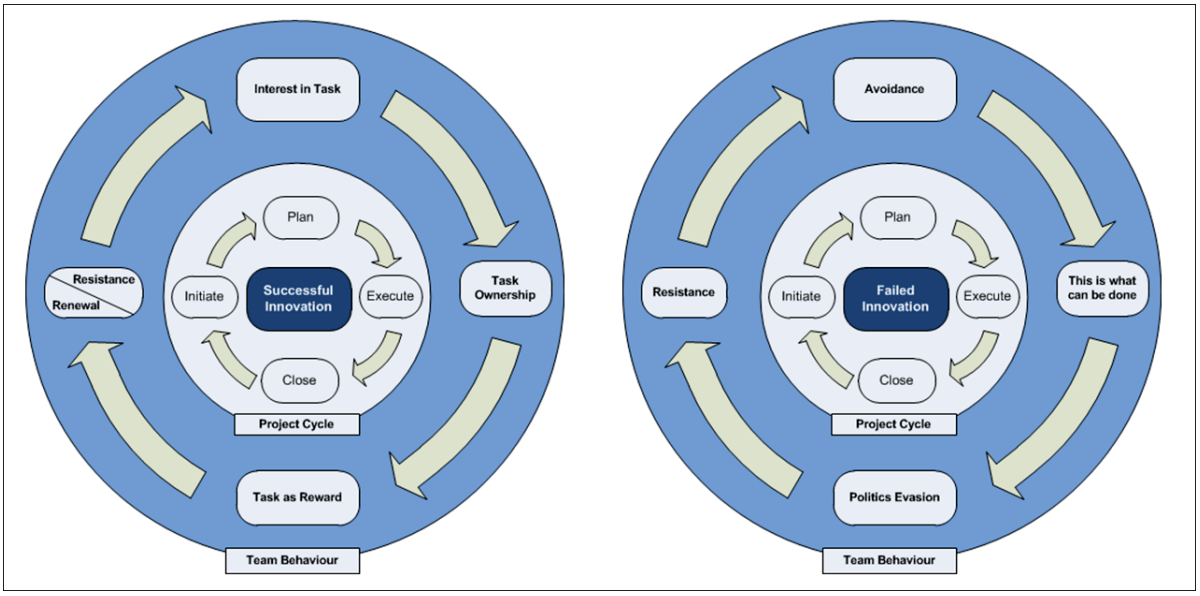

Figure 8-1 Team Behaviour of Successful and Unsuccessful Projects

The inner circle of the diagram represents the project management process and the outer circle the team behaviour at different stages of the project. Figure 8-2, in which the differentiating leadership practices are overlayed on team behaviour, shows the

transformational impact of these practices upon the project team's capacity to innovate. These practices include:

a. Constituting an appropriate team, promoting open-minded enquiry amongst its members, and enthusing full participation by all.
b. Developing team members' appetite for risk, shielding them from political pressures, facilitating the framing and full understanding of the problem, and kindling the team's embracement of challenge.
c. Promoting learning and relevant knowledge creation, and encouraging collaboration as a source of creativity.
d. Demonstrating commitment and resilience in problem-solving and setting standards for what constitutes an acceptably innovative solution to the challenge.

These leadership practices manifested through a range of taken-for-granted behaviours that were a feature of the projects in which successive innovation was achieved. In these projects generative conversations focused upon collective learning and knowledge generation thereby creating a form of 'learning organisation' within the project. This research makes very clear the relationship between the nature of discourse within a project environment and the quality of learning and pertinent knowledge creation within it.

> Furthermore, it indicates that the requisite rich discourse underpinning the achievement of successive innovation within a project team, depends on the nature of the interpersonal relationships between team members and other key project stakeholders. It appears that the leadership practices outlined in this research, generate and leverage the intangible capital resources that are vital to such communicatively-rich relationships. Such relationship-based resources include *trust*, *commitment*, *resilience* (with respect to problem-solving), *capacity for risk*, *communicative and collaborative capabilities*, and *creativity*. Of specific significance are the leadership practices that insulate the teams from the risks of failure and provisioning an apolitical (safe) environment within the project as vital in creating an environment for innovation to thrive.

The componential theory of innovation (Amabile 1983) identified domain-relevant skills, creativity-relevant processes, intrinsic motivation and the social environment in which the individual is working as key components of innovation. The latest extension to the theory (Amabile 2012) included the implications for the work environments created by managers on the original components of the theory. Neither this theory nor the other literatures surveyed on the topic have considered habitus management as a factor in creating innovation supportive social environments. This research identified habitus management at both individual (Bourdieu 1977) and organisational (Chan 2003, Tatli 2010) levels as important factors in establishing a social environment that supports innovation; this appears to be a unique contribution to the innovation domain.

In particular, the results emphasise the importance of such practices being manifested at middle, or project, management level. From this research, it appears that it is at this level where the politics of innovation are successfully managed in projects that deliver innovation of some sort.

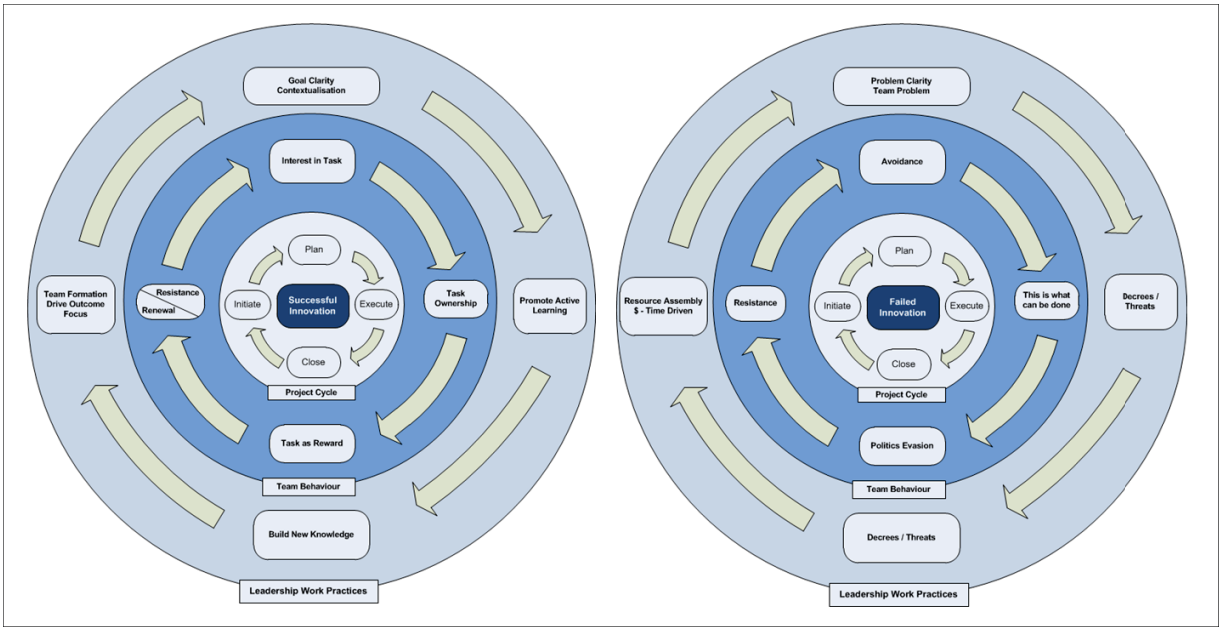

Figure 8-2 Influence of Leadership Practices on Team Behaviour

While other researchers (Amabile 1996; Nonaka et al. 2008; Liker 2003) have similarly stressed the role of middle management in a firm's capacity for innovation, the positivistic nature of their research tends to view leadership as a set of competencies of individual middle managers rather than an inclusive array of 'practices' that are an intangible feature of the social context in which innovation is successively achieved. Similarly, researchers like Glor (1997) (who is a major dissenter from the view that middle management's behaviour is critical to successful innovative capabilities) views the capacity of the members of the executive leadership team to facilitate the 'cohesiveness of the stakeholder collective' and the 'strategic intent to innovate', as key to a firm's capacity to innovate. Whilst executive commitment to innovation is very important, this research shows that to shift such commitment from rhetoric to effective leadership practices is a difficult political task and is not likely to happen without the political nous of middle, or project, managers. The research indicates that it is the leadership practices of the local leaders or middle managers or project managers is the key to driving innovation in a project environment.

8.2 Limitations of the Research

As already articulated action research is located within the constructionist research paradigm and thus openly acknowledges the political and value-laden nature of all social realities. As an insider, I had a vested interest in the successful outcome of the intervention but was also keenly aware that such success depended on accurate interpretation of the outcomes of the collective strategic action (and understanding of the knowledge generated through the process). Distortion of the data (or their manipulation) was, thus, not in my interests or those of the collective and, anyway, would have been evident to all through the transparent practices of action research.

Accepting the particularistic nature of this investigation, my concern was to make sure that the following issues relating to 'insider' research were addressed (Coghlan et al. 2003):

- *Pre-understanding*: a danger with insider research is the taking for granted of what an outsider may question and, therefore, the failure of researchers to probe issues sufficiently deeply. This issue was addressed by explicitly inviting broad critique and questioning of my data, interpretations and action (especially by my research supervisors).
- *Role duality*: another danger with insider research is the possibility that the politics of the practical agenda are allowed to distort or contradict the research interests of the intervention. Once again, what was helpful in addressing this challenge was the 'external critic' role (Sarason 1972) played by my university-based research supervisors in assisting me to address such issues.

Another limitation of this research is the relatively small size of the projects in which successive innovation was achieved. The leadership practices that have been made explicit through this research may be difficult or impossible to realise in large projects with many more stakeholders than was the case in these two small projects.

8.3 Further Research

Further research is clearly needed – particularly research located within alternative philosophical paradigms to the dominant positivistic approach that informs much current research on the topic of innovation. In particular, the 'practice' perspective appears to hold much promise for new insights into the social dynamics of innovation and, given the ontological and epistemological assumptions of this perspective, this necessarily calls for more research that is located within the constructionist paradigm. Phenomena such as in-situ coping, the negotiation of everyday constraints in real time, the manner in which lived experience manifests in its most refined form; and how practical wisdom becomes embodied in actions and embedded in everyday consciousness, require more explicit explication and better understanding. Leadership practices are social phenomena that are profoundly situational; relational at the core and manifesting through, and in collaboration with, others.

They are socially constructed and inter-subjectively sustained and executed and thus are most appropriately researched from a constructionist perspective.

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APPENDIX

10 APPENDIX – DAM Project Documentation

DAM, a strategic product for TNC, was planned to be launched at TNC headquarters and in TNC Australia. In the documentations below the names of individuals and organisational units are abridged to initials to preserve organisational confidentiality. The details are interspersed with my analysis in italics in smaller fonts.

10.1 DAM Project Research Diary

10.1.1 Meeting with Core Teams of TNC-Australia and TNC- Head Office

15 May

Headquarters IT Director inducts me (Siva) into the DAM project. MF, the business project manager invites me to a workshop with core team drawn from TNC Australia and TNC Headquarters Team.

The core team for the DAM project comprised Business Project Manager, Product manager, Business Analyst, Product Analyst, Marketing Reps, IT Engagement manager, IT Relationship Manager, IT Subject Matter Expert (SME), IT Architect, HQ IT Director and a few others.

Everyone from the Project House (PH) asked Siva as to why he was there what his role was. They appeared relaxed when Siva told that he does not charge his time to the project but is present to support the HQ IT Director.

Roles of individual team members were discussed. Confusion prevailed on understanding the roles of different types of project managers fielded by TNC Australia.

Project was in progress since Dec 07 at TNC, a big team from Australia had spent time with TNC Headquarters to understand the project. But the DAM project at Australia was kicked off only two weeks ago.

Requirements were not documented and hence understood differently by different parties.

Questions in the meeting were centring on the interest areas of individuals rather than attempting to get the full picture of the product. Some of the typical questions / comments were:

- What billing system did you use in Headquarters?
- Does data warehouse give customer demographic data in real time?
- When are you going to tender?
- Australia has distinct and different regulatory requirements – may result in increased project cost and time.
- Who will manage Customer Service functions?
- What is the drop dead date for Funding Committee submission?

Australian IT Architect explained in detail about a particular search engine used in data warehouse and whinged on how that area is suffering from funding neglect.

IT Engagement Manager wanted requirement specs and design documents of headquarters implementation before any work could commence in Australia.

Siva intervened with a few questions.

On the question on the details of the dynamic demographic data needed, the responses were patchy, no one could explain how the dynamic data were (and are going to be) used in the product. It became apparent that there was no need for dynamic demographic data feeds from data warehouse. However the group chose to ignore this key conclusion.

On the question on the differences in regulatory regime that was being touted as the single biggest cause of cost and time increases in Australia. The response was that in Australian customers opt-in whilst in HQ customers opt-out. Again it was apparent that this was a very minor aspect that should have no impact on time or cost or complexity.

After an hour and a half, the meeting ended with no firm action points except that each participant was convinced that the project was very complex and nobody's understanding of the product improved.

Siva retained the Australian team after the teleconference and gathered the following details:

- Billing is only needed for charging the vendors who provide advertisements, the end customers were not be billed. Customers got this product / service for free.
- The data required to provide targeted services to customers were mainly static and there was no need for dynamic injection of data from data warehouse. Though the team understood this, they refused to give into this factual position.
- The team aired its irritation to IT folks and were complaining about specific individuals and collectively at the organization for being petty, not delivering anything useful but charging for everything.

Analysis

The project was drawing conclusion based on assumptions and not on facts. The project management group and the delivering groups were at odds. Distrust was very open and deep.

The knowledge on the product was very shallow. The key promoters had sketchy understanding of what the product is all about; they rallied around catch phrases to hide their deficiencies in understanding ("regulatory variation" and "dynamic customer profile data" as shields against providing the actual details.)

No one had an idea ('vision') on how that product will look at the end and what 'value' it would yield to the customer.

When facts were probed and details elicited (e.g. real time data from data warehouse is not required and the Australian regulatory requirements was not an issue); the group refused to accept these facts or even offered to explore them. It appeared that the assumptions were giving them a comfortable shied or insurance against potential failures.

The questions asked around the table was not about eliciting information that would aid in developing solutions but they were about carving turfs and defining boundaries (e.g. questions on billing system, discourses on Data warehouse search engines, and discussions on customer support). These discussions were building on untested assumptions.

The TNC head office felt that TNC-Australia was unnecessarily hiking the cost. The local project management group was convinced that this was due to untenably high cost of the delivery groups, mainly IT. There was no attempt made to get at the details. Different groups were appeared satisfied in gaining some proof for their positions rather than getting a full picture.

The air was full of negativity as everyone declared the project to be very complex and privately declared that this project will fail because of the other teams.

Siva felt that there was a hidden feeling that this project must be canned. This feeling was arising from not understanding the problem in full and fears of being able to deliver the product by coordinating with other groups. I (Siva) did not have sufficient 'proof' to support this conclusion.

10.1.2 Ad-hoc Request from Project House to Support the project

19 May

BA, the GM accountable for delivering this project from project house calls on Siva to elicit support to make this project successful.

BA starts with castigating IT as useless and incompetent. He picked person after person who were present in the meeting and had something negative to say about everyone them.

"Look at RS, she is in this job for 10 years but is totally useless".
"Look at the GM of IT, he has just one end to end designer in PB, why can't he go to market and get a few more."
"IT wants to just throw process at the problem instead of developing code (programs)."
Though there was a considerable merit in some of what he said, he was nevertheless very emotive and partisan. He was confusing between systemic limitations and individual resistance.

Siva attempted to be a patient listener and let BA let of all the steam whilst asking gentle questions to delve into facts.

At the end of the meeting, BA realised that there were both systemic problems as well as 'unhelpful and stupid' IT personnel.

BA requested that Siva pull some wires within IT to make this project happen successfully.

10.1.3 Obtaining CIO Buy-in

20 May — Siva met with CIO and briefed him on the details.

Siva and CIO discussed the following items:
The defensiveness of IT,
Lack of "consulting" skills,
Particular lack of experience and skills of project and engagement managers,
In ability to understand the requirements and arrive at the real problem,
Delivering an effective solution to the given problem and
Providing a level of confidence to the PH.

CIO was distracted in his reorganization initiatives and was telling about impending reorganisations in the project house.

The meeting ended as an exercise of exchanging information. There were no commitments for remedial actions.

10.1.4 Project goes into Hiatus

May – Aug — The project went into a lull. The buzz of reorganisation consumed all the attention and the focus on the project was low.

10.1.5 CIO Directs Siva to Intervene

Sep 1 — CIO briefs Siva that the DAM project is in serious trouble.

CIO and President Project House have jointly agreed to make this project a success by delivering the project in series of small steps each step build on the earlier one.

CIO is wary of the project manager from PH. He considers that PM to be very unreliable and slippery.

CIO wants Siva to inject himself into the process to drive the project. CIO was unsure of the capability of the new IT designer assigned to the project who was very young and bureaucratic; he advised Siva to mentor her.

Analysis

The young designer left the project within a week, the seasoned designer continues on the project till his last day of service.

BA meets Siva

Sep 2

BA meets Siva to discuss the DAM project. The meeting was once again devoted to criticising IT and slamming specific IT staff. His pet peeve was that some of the IT staff told him that they do not know about the project whilst charging their time to the project for the past two months.

Siva attempted to ask questions to get to the facts instead of emotive judgements. Very soon, BA was unable to quantify any specific grouse against IT excepting the alleged comment that an individual in IT told him that he did not know about the project whilst his staff were charging their time to the project.

BA moved on to next grouse that IT is throwing cost at him whilst EH is charging him very little. When drawn to facts through questions, (IT and EH were both charging huge amounts) BA was defensive that he would do the project without IT and questioned some specific cost items from IT.

Siva understood that BA did not have any dialogue with IT but is pretty upset at large.

Analysis

BA was having anti-IT mindset arising fuelled by past events. This was further aggravated by some inappropriate behaviour from IT.

10.1.6 Rallying IT to Act

Sep 3

Siva met with RJ the go getting IT program manager assigned to supervise the IT part of the project. Siva explained the dynamics of the situation and sought his help in having open dialogues with PH and transparent justification for every cost element. RJ agreed but not before warning Siva with the following eerie statement:

"*Siva, BA and DR are out to get IT, the project will not succeed, they will torch IT. Do not trust them."*

Sep 10

Siva participates in a workshop to cost IT activities chaired by RJ. The group comprised a set of designers from different IT departments plus a couple of engagement managers.

The designers were very critical of the requirements. They interpreted every vague requirement to its hilt by expanding to possible implementation vagaries and tried coming up with design options. In the words of PB, the end to end designer for IT;
"*Look at this requirement …… etc. Can anyone of you design a system for open ended requirement? Anything you design will be declared wrong as they start defining etc.*."

Participants giggled and started berating PH and MG.

IT group accused Project House of not being able to segment the requirements into releases or stages.

The costing was done on the basis of being very conservative and all estimates were +/- 100%. Every element was costed very generously without understanding if that element is required at all.

Siva tried to reason with RJ to have a more supportive and collaborative mindset in the project for which RJ said,

"*Don't trust them, Siva. They won't tell you the requirements and of the product does not work properly they will nail IT. They are out to get IT*."

Analysis

IT never attempted to discuss the requirements to understand them or negotiate to release the product in stages (multiple releases). They were more interested in picking holes to score points against MG and PH. The behaviour of IT was not correct. Their distrust on other groups got the better of their professionalism.

10.1.7 Local Leadership Upset About Cost

Sep 11

BA meets Siva and rails IT for an outrageous cost with his assistant BuA chiming along.

BA was convinced that IT has nothing to develop for the product and hence should not cost him anything.

"*IT is taking us for a ride Siva. IT has nothing to develop, they should not charge us. They are out to get us*."

Siva attempted to reason with him to see the facts but had no success.

A meeting was set for the next morning to follow up.

Sep 12

BA was still angry.

Siva attempted to review cost of every item of contention and tried explaining the rationale behind each estimate.

Siva attempted to explain that IT was not out to get him but is following a process laid down by the company and is transparent per that process.

BA was unconvinced and invites Siva to a task force meeting with his group.

10.1.8 Taskforce Meeting

Siva meets MM (mentor to BA), Divisional Project Director, the DAM Project Manager.

The group discussed each cost item. At every element BA did not miss a beat to rail IT.

The DAM project manager (DR) simply said, "With this cost, I cannot go to XXX (the funding committee) I will be torched. I will simply go to the committee and say that based on the cost estimates of IT, the business case no longer stacks up and I will seek to close it."

The team discussed options of removing some of these components to cut the cost.

Siva intervened as asked if the group ever sat with IT Project Manager to understand the rationale behind the cost and the assumptions underlying the solution option proposed.

The group replies in negative.

BA started railing individual IT staff. He picked the case of a departing IT designer and accused IT of not having enough skill-pool to replace departing designer. The Divisional PD adds,
"Can't not IT go to market and get another end to end designer. How could they say they don't have an end to end designer?" The PD chimes in,
"*if you don't have the skill you buy from the market, it is the 101 of project management*."

Siva explained that the end to end designer is not a skill that is available as a commodity to procure. A good designer joins a company usually to design applications on a given system or set of systems. Over time, he builds knowledge about the systems in the environment, and those systems outside the environment and how all of them interact to support complex business processes. Not all designers gain that visualisation and

realisation and rarely a few achieve that distinction. It is a skill that is grown in the environment and nurtured by it and not procured from the market.

The group, sans BA agrees to this logic.

MM directs BA to discuss with IT the solution options and ways to the cost estimates. The group agrees.

The divisional PD accuses IT of inappropriate behaviour citing the instance of as IT deriding and discounting several requirements as flights of fancy instead of constructively discussing them with PH.

The group asks Siva to bring in key people from IT to discuss the solution.

Siva demanded that the meeting be a workshop with IT, EH and PH so that all the groups were in the same page. Siva requested DR to conduct the workshop with an aim to increase communication and foster transparency and mutual trust.

The workshop was scheduled for 16 Sep

10.1.9 Siva Briefs CIO

Sep 12 Siva briefs the CIO.

CIO accepts the methods used by Siva to get the project moving.

Siva advises CIO to hold a meeting with President of project house to push for revising the requirements and take time to educate IT on the priorities of requirement.

Analysis

The entire project is suffering from mutual distrust.

There were no attempts by IT to understand the requirements. Neither did PH and MG ever attempted to explain the requirements to IT.

BA the owner of the project is particularly bitter about IT and wants to eliminate IT from the project.

Communications between groups were minimal and each group tried to be very defensive and protect themselves from risks both real and imaginary.

The situation warranted open and honest communications, focusing on facts and putting bitterness behind.

Both IT and Project House were at fault, neither approached the other with honest intent to work towards the goal but were worried sick of defending themselves from future damages.

(Later, Siva learnt individually from CIO and RJ that the same groups interacted in two other high profile projects, where IT was accused for those project failures. Siva learnt from CIO that IT was singled out for bashing by certain groups within company to pave the way for subsuming IT within another organisational unit.)

Managerial Practices tired:
No lecturing, only actions.
Always guide discussions towards fact based evaluations.
Never defend any emotive outbursts but go back to facts
Take over the leadership that is absent in the situation
Promote communication
Gain executive sponsoring.
Guide executives with the next steps of actions (Upward Management)

10.1.10 The Workshop

Sep 16 The much awaited workshop commences at 10 AM. IT, Prod House and Networks participated. Siva joins as an observer.

It took a few minutes for the IT team to locate the meeting room and they arrived 5 minutes late. The PH and EH went about making rude comments on IT.

Siva heard all of them without protest.

When the meeting commenced, Siva requested permission to tape the meeting which was granted.

The meeting was a fiasco, the focus was on cost cutting and IT bashing. Siva had to make a passionate plea around the 20th minute to stop bagging IT and behave like mature adults.

Full transcript of the meeting is presented in section 10.2.

10.1.11 Follow up with IT

Sep 16

RJ, RS and VBC meet collectively and individually with Siva.

They explained several past events that damaged them.

They felt as if they were returning from a gladiatorial bout and were glad that they were not damaged.

When drawn to their short comings in being open they were very defensive, took hiding under process. Blamed other IT groups (I**) for the shortcomings.

They did not have any clear rationale for their behaviour; they were more emotive than objective.

There was some unquantified fear and distrust in dealing with the PH group.

10.1.12 Follow up with PH

Sep 17

BA meets Siva to discuss the outcome.

BA was upset that the workshop was not useful. In BA's words, "it was useless" and blamed IT.

BA was threatening to pull the project down on cost grounds and put the blame on IT.

Siva advised BA once again to view things from a solution perspective. Instead of being upset about cost, discuss the solution; make IT to describe what they are offering and justify their cost for the offering. This would offer a platform for the collective group to consider alternatives to drive the cost down.

BA appeared marginally receptive. For the first time he said a few things negative of his folks from PH. He was deriding his PM as inflexible and his assistant BuA does not think clearly and she needs to think differently.

The meeting ended in convincing BA to call for a quick discussion with IT PM and his PM to discuss the solution and to arrive at lower cost alternatives.

Siva broached on the concept of Solution Staging but was not taken up. BA simply ignored it.

BA requested that he be given one line description of what each of the systems mentioned in the presentation do for him to understand the details and push his folks.

Analysis

Across these events, Siva operated dispassionately as a therapist bringing warped individuals to see the facts.

At any stage any activities of Siva were unique and guiding the team towards innovation. Instead Siva was patiently turning the team to countenance facts and take the path of progress.

At every stage, Siva sidestepped judging the opinion or stance taken by the individuals and was consciously operating on a plane above it (being an adult in a children's world).

Surprisingly the time Siva spent in each of these interactions were extremely small barring the work shop all other interactions were between 5 and 15 minutes at best.

Quick sharp mist clearing interactions appeared to be working.

Sep 17 Siva requests RJ to provide one line description of the systems mentioned in IT solution to BA.

RJ refuses outright. RJ explains that he does not trust BA one bit and he might use it to beat IT in some other forum in the most bizarre way. He explained this with some anecdote which Siva could not fully grasp. Long and short of it was that RJ did not trust BA and he fears hidden risks behind the ostensibly benign request.

When Siva persisted, RJ relented to provide the details if he got an email from BA requesting these details including explicit reasons for such request.

Siva attempted to mediate the situation by offering to issue such an email and copy BA advising BA to chime in if the rationale provided by Siva was not accurate.

Reluctantly RJ agrees.

RJ provided the details the next morning, very good one pager

Sep 17 Siva provided the audio recording to CIO with pointers to key areas. Siva requested that CIO listen to those spots and then Siva would brief him on the project.

Sep 18 Siva met with BA, DR and BA individually at the corridors and egged them to consider viewing the problem from a solution perspective instead of cost perspective. Siva promoted the idea of staging the solution once again. This was not taken up. BA had strong negative feelings about this approach but could not articulate it.

Sep 19 DR invited Siva for a workshop with EH to discuss alternative solution options. IT was not invited but Siva was.

10.1.13 Network –Project House Workshop

Sep 19

Meeting was attended by BA, DR, and three EH people

BA wanted to block IT off the product solution and use EH instead

BA identified each cost item of IT and asked if EH could provide a screen to do this on their portal.

BA made no attempt to understand the details of what is being offered but was keen to block IT from the project

Siva advised that each line item has a solution function associated with it and explained each with his limited knowledge

BA was keen to come up with alternatives or dismiss each function in preference to cutting those cost items.

Siva advised BA and DR to hold a solution summit to discuss solution not unilateral cost cutting and drew their attention to post implementation scenario where the solution is expected to scale to support growing customer base.

Reluctantly the duo agreed as if to shut Siva up. In disgust, Siva left the meeting.

Analysis

Teaming was completely absent. Siva does not have the power or charm to induce teaming. Siva should find what precludes teaming from happening.

IT is very defensive, out to prove the PMs from Project House have gotten it wrong rather than justify the IT's position.

Product managers hate IT and want to go with EH to deliver some solution. They appear to feel that being with EH is insulation against any of failures.

Product managers did not want to listen but wanted responses that things will be done their way at a cost and time they liked. Something smacks of immaturity or arrogance or both.

Situation warranted leadership actions. Facilitations by Siva alone were clearly insufficient.

Sep 19 BA called Siva apologetically accepted that the workshop was shoddily held and it departed from what was agreed with him. He was against shuffling costs but keen on getting at alternative solutions.

10.1.14 CIO Briefing

Sep 19 Siva provides the following summary:

1. The project team is very fractured, do not have same purpose and they appear to be driven by different motives.
2. Getting a cohesive team with a common purpose is the need for the hour.
3. Common purpose stems from a common outcome (the solution) but not on diverging and conflicting requirements. The give and take "essence of collaboration" has not taken place with arguments on cost and questioning the sagacity of requirements.
4. Advises CIO and President of PH drive the 'teaming processes' before any meaningful outcome could be expected.

CIO agrees but is reluctant to engage President of PH, cites other conflicts at his levels.

Analysis

Leadership agrees with the reality but is unable act. Therefore Siva has to come up with other methods to change the course of DAM.

1. Broach key individuals on the merits of the solution centric approach (try getting the real reasons from BA and PM against adopting this approach)
2. Get the full team to discuss solution options from first principles (a concept borrowed from zero based budgeting).
3. Inject Pilot as an option if consensus does not emerge.

Siva briefs BA, DR and RJ individually on the need to focus on solution. With polite verbal acceptance, agree for a workshop but Siva finds an implied reluctance to embrace solution based approach. Siva needs to find the real reason.

10.1.15 Workshop with Full Team

Sep 29

(As the workshop was planned, Siva has requested the CIO to ensure that he and his counterparts from other stakeholder groups attend the workshop to demonstrate solidarity at the executive level and enforce 'one team focus' on the team. He agreed and made arrangements for his counterparts to attend the meeting at least for the initial one hour.)

None of the executives who were supposed to attend turned up. So were the key stakeholder managers of the project. The meeting was attended by the PM of DAM, BuA the junior rep from MG, an architect from EH and the IT team. This did not augur well for the workshop.

Discussion of solution option commenced with BuA detailing the product. BuA was vacillating between vision, requirement and aspiration and was resisting any rational grounding to realities. (E.g. (1) Data Warehouse details for targeted services; refuses to accept that such data is not available but insists integration with DWH is needed to get more revenue from service providers. (2) On how to enrol customers and what discounts to be provided – provided several conflicting thoughts and was refusing to come to any grounding)

Siva requested BuA to describe the use case – assume the product is launched and how a user, advertiser and TNC-Australia will interact.

BuA freaks out, she screamed loud, "*THEY ARE KILLING ME, KILLING ME*".

One of the lady IT managers hugged BuA to calm her down. BuA's response on use case was pretty much useless. The meeting ended to prevent further aggravating BuA and getting her into tears.

Analysis

The situation has reached an impasse. MG reps BuA and BG did not have any clear idea of the product and how it could be designed and launched. They had a very high level view which

they have sold to their leadership citing other corporations are having such products. Their ego was too big to accept that implementation of DAM in TNC Australia had its own set of issues which must be considered. They were keen on pushing a set of requirements to be implemented and refused to countenance the applicability or feasibility of such requirements.

Siva was still not able to understand why every group in this exercise were digging their heels and not willing view it from a solution perspective.

Focus on solution has failed. So Siva broaches BA and DR to consider launching the product in stages, develop the product to market needs rather than with an assumed design. Siva used the cost and acceptance of Funding Committee paper as the lever instead of the logic of going in stages. Interestingly this option was entertained positively by BA and DR.

10.1.16 Events During 29 Sep – 15 Oct

DR and BA try out outsourcing options with three vendors. The group as a whole participates in the discussions and chooses one of the vendors on revenue share basis to launch the product in stages.

DR avoids using the word stage or pilot but coins the phrase "controlled launch" which is accepted by all the stake holders

DR explained Siva the rationale behind the resistance to staged release as below:
MG's KPI measures them on product revenue, market share etc.
PH's KPI measures them on delivering the product to the requirement specified by MG
IT and EH KPIs measure them on delivering the product to PH specs.
These conflicting KPIs preclude PH from engaging in evolutionary launches as their KPI does not support it.

(Details of controlled launch are suppressed due its commercial sensitivity)

On a separate workshop, IT (RJ) recorded his protest. Alleged that DR is running the project in wrong track wasting company money and citied several security reasons (mostly discountable) to stall the progress.

The approach of 'Controlled Launch' using a vendor was approved by the executive leadership

The project commenced progressing in the 'Controlled Launch' direction.

Analysis

Siva finally understood as to why every group in this exercise is digging their heels and not willing view it from a solution perspective. The key reasons were:

1. Product group is measured on the revenue they generate from a product and hence they come up with some assumed revenue generation potential. In order to safeguard themselves against risks, they come up with very convoluted requirements that are often difficult for technology organizations like IT or EH to meet.
2. PH group is measured on delivering products to the specified requirements; its focus is on meeting the requirements rather than evaluating or staging the requirements. They avoid the risk of being blamed for not delivering what the product group wanted by slavishly adhering to the requirements, however outlandish they may be.
3. IT and EH are the groups that deliver to these requirements through the solutions they devise. Since the environment is complex and requirements are difficult to meet, the project ends up costing high. Product groups force these groups to cut the cost for its business case for the product to succeed.

In effect, every group is trying to avoid their risks by passing it on to the other group. When the product fails, they search for a group to be blamed. Therefore during the initial stages, each group was going out of their way to register as to why something cannot be done and cover themselves with several caveats before offering a solution.

The key victim in this process is "Innovation", the groups fail to think and think aloud let alone think creatively. They think to avoid the risk and escape the blame game rather than come up with a winning solution.

10.2 Transcript of DAM Solution Workshop

Date: 16 Sep 2008

Venue: Conference Room

Time: 10:00 hrs.

Duration: 74min

Note: some company sensitive information are blanked out with *** and generic function names provided for continuity. All financial details are suppressed.

DR	I just want to have a time to look at what it is we need to do to reduce the cost quite significantly at the same time building a product that is going to be viable …that is going to be viable proposition we want to put out there. That is the main focus of the conversation today. I haven't prescribed any framework or discussion point or anything of that sort. I want to keep it open and free and look at ….. May be we will start with IT component first, that is making up bulk of the cost and then look at what it is we can do differently or … may be there is a change in understanding might help us reduce the cost.
RJ	Couple of things I just want to go over… In talking to ***(CIO) When ***(CIO) saw the last paper, the question he asked was, could we deliver something under $X million. Based upon his X million let me explain to you….
BA	(interrupting) Sorry .. what X million you are talking about?
RJ	Can we do something in X million,
DR	(interrupting) What can you do to half the cost?
RJ	I am going to give you now my thoughts
Group	OK

RJ We have got the TNC costs and outside (costs)…Call it whatever you want it is important to understand.

BuA (interrupting) just a quick question, outside cost does that refer to N** cost or any other cost?

RJ No No No it is outside of DAM. Outside of DAM we have **** (names the earlier project) that is x.1, we have CPS for which we have a figure of x.x, .. we have got ah… hardware instead of these instead of ah … x.x

BA Can I ask just stop one second RJ,

RJ Yes

BA I talked to N** (system integrators) and they said that in the CPS cost hardware is included

RJ No it is not. I spoke to Actually went and speak to I got the details here

DR We have the quote here, hardware is excluded

RJ Excluded Excluded

(BA in low voice of disbelief) I thought it was included. BuA joins in)

BA OK we will take this on the side.

RJ This includes (lists out cost details)

(Low voice talks between BuA, BA and RJ – did they use another one….)

Siva You can blame IT man!

(general laughter)

RJ (spells out cost figures) that is x.x M cost for that

BA Have you discussed this with *** (previous project) costs? ***(previous project) cost already been discussed?

DR I have done (reels out set of figures)

RJ Right now you have x.x M outside of anything to do with DAM

BG Is there a possible that there is a misunderstanding on what business is saying as requirement and what the technical teams has interpreted as?
(a bit of commotion as BA, BuA and BG jointly speak… could not decode)

RJ We have not been involved in any discussions with CPS

DR Hang on… Hang on R***

(BuA screams What, goes into a laugh of disbelief, shrill protest of BA and sharp interjection by RJ – a cacophony. Details unable to be decoded. DR quickly brings about order)

DR You are one person representing IT and I think you individually may not have been involved but IT has been

RJ I have spoken to (names a person in the System Integrator's team). The initial cost of x.x has gone up by x.x

BA Absolutely. Understand that but don't say that IT was not involved. That is not right. IT was involved.

RJ IT Procurement has not involved at all

BA Procurement no but IT technical guys involved

RJ We have not been involved as a unit, we have been invited … involved in. So much so in relation to this program going ahead with this vendor IT will not be writing the WOC business will be writing the WOC not the IT. We have nothing do with the RFI etc.

(big commotion – lots of protests – din – could not decode)

BA Hope you are taking it down yeah? (pointing to Siva)

RJ Lets explain something else about this. We do need As I said to DR to cut some requirement. To cut some requirement and scope, this cost will change…

BuA That is only 2 of 12

RJ	That's right. But then DR says he is going to look at that
BA	Can we please discuss this and close this?
Siva	Excellent idea
DR	He says easy one to close of R**, (spells out cost numbers allocated to IT etc….)
RS	What about the other delivery of Ishtar?
BuA	(interrupting) OK, lets just let R*** finish this
RJ	Coming back, L** said he can do in 6 but the cost we are coming up for TNC IT is $5M
BuA	So how is the 5M
RJ	Here is the line items (displays through projector)
BuA	Yeah
RJ	Here is the line item you can think about it that's why we have PB (architect) here. Explains line item details that relate to cost of every system that is being integrated with. .. we have couple of interfaces but do not what to report … none specified in the requirement
BA	Say that again
RJ	Data warehouse has costs because we have interfaces …don't know if we are going do data modelling at all That's a big question as to what's going on..
BuA	OK Ok just finish just finish (anxiously interrupts and seeing the signal of DR, pulls back)
RJ	(You got xxx, yyy (delivery milestones of TNC) and cost estimates for each of them)

BuA Quick Question about that D** there are also other program costs (reels of some numbers) does that include or …

DR No this is IT, this is IT

BuA So separate? OK

RJ (Continues to list cost items)

BuA Based upon?

RJ Based upon 12 month program

BuA OK Yeah

RJ Um…..

BuA You are missing about 1.5M

RJ Then you have to go to sys A, B, C, customer care, support stuff etc.

BuA OK cost is $X, what about customer billing

RJ That's all part of billing we have (rattles several system names)

BuA How much is that roughly?

RJ That's rest of the money

BuA Not very high

RJ Not high. Your main items here are (details key cost items)

BG Can I ask for (recording garbled)

RJ OK

BG (continues the question) Last time I brought up Data Warehouse into the meeting with one of the… CPS vendors they walked away saying, "BG why do you want to build a new database, why not use Datawarehouse." RJ on the board you have $XM as (system integrator's) cost and a cost of $YM on the IT side.

RJ No. Where is $XM? There is (system integrator) cost of n million .. The hardware is not (from system integrator) it is (from IT)

BG So is that related to the CPS

RJ Yes

BG So Xmillion dollar for CPS plus YMillion dollars for IDW side. Is it really cheaper for us to build a new database or use IDW to do the function of routing? Has anyone looked at it?

RJ No. We haven't looked at it at all

BuA Hang on Hang on

RJ We came back to the requirements (BuA talks over)

BuA No No No

BG I as business cannot say that I want a fresh new database, I as a business can say I want a profiling database. And as IT, I am hoping you to say that Datawarehouse is the ideal place to do or in a million years data warehouse cannot do what you are asking for, you have to go build a database. I can't define that.

BuA (Interrupting)… Just to answer that…

RJ Where are we building a new database? Hang on. Hang on. Just to answer that .. CPS comes with a standard database, it is like that, we are not building new database. CPS has.

BuA (Interrupts not clear)

RJ CPS has to have that information as well as you can have it in DW. CPS always has to have that information

BA The question is right…

BuA (Interrupts , not clear)

BG I am not technical person right, what I have been told by my MG guys who are more technical that DW with some enhancements can do all I am asking for without building a new database.

BuA Just to interject very quickly….In terms of requirement gathering session and workshop with *** (system integrator), Someone called ** (so and so) from DW

RJ Yes, Yes

BuA Was heavily involved. (explains the difference between DW and CPS and the decision that CPS was needed as DW is not capable of meeting the requirement).

RJ That is the case, I know for certain from past …

BuA (with a sarcastic laughter) OK. You started the conversation by going well actually based on your requirement we are going out looking at the CPS. That's why I just want to make sure that you and us are aligned.

RJ That's what, if you want real time stuff and all you have to use CPS. That's the master (BuA interrupts)

BuA (interrupting) IT is pretty clearly telling us we can't use DW for what we want and your recommendation is to use the CPS system (speech trails off)

RJ We could change DW to do that the question is multi-multi million dollars. 20M
(lots of people speaking simultaneously – cannot decode accurately)

BuA So basically to answer the question is your recommendation though is to go out and build CPS rather than to build upon DW. Is this correct?

Exhibit A	
Siva	Guys, can I make a point here please? I feel a bit offended or bit sad, because we are now trying to talk as, "IT said so, we are not doing so". After this meeting, the whole group, everybody around the table are going to sit together and do the project. For a moment, let's take the point and leave the name IT or XX, We are one single goddamn company. Please I request you. (Voice raises and turns emotional)
Genl	OK
RJ	Tell me about it.
Arch	Have we looked in depth to know what it takes to put this in DW. The answer is no. We had one guy from DW looked at the requirements. Every option you want investigated takes time and money.
DR	Look Guys
Arch	To it decently….right. DW could be upgraded to do in real time, we don't know how much it would cost some efforts to .. see what it would take….Given the place where DW is at the moment, may be not a place for you to ….
RJ	Definitely (every one speaks at once ….words heard are may cost more than a Million dollars Yeah…)
DR	Let's put a structure around this We are jumping from one system to another,. Collectively we have to come with a way of where we can reduce the cost.
RJ	OK let's look at the picture here. If you decide let's say…Sys A, Sys B I'd not back up You have to get buy in from your business (describes the change of business practice). Get information from ***(so and so).
BA	That's what I am saying. Let' take one…

RJ Hold on. Hold on. With ** (department x) or ** (department y) your customer service is going to be hammered …I have been with this company from day one. I had been to ** (department x) once in my life time and I won't go in there again. Because every time you go in there, some issue whatever. You are going to hammered by customer service, (repeats it twice)

BuA (Disdainful laugh – pretty loud)

RJ I am continuing with customer service, you are going to hear from customer service, sorry we are stopping the service (repeats again). *** are going to stop this.

BG Rather than going (unable to decode)… Can you tell me the top 10 requirement and I will be able to tell whether we need the requirement or not.

IT Anal2 Can I suggest that you use this as starting point and
(RJ talks over)
and the capability you require.

RJ Remember this is not the requirement, this is the standard we….
(ITA 2 speaks over)

IT A2 ….. This is the key capability that we understand the project need to achieve and the cost …. (speaks ever so softly ….)

DR Yes we can do that, sweet, as we go through let us look at alternatives we might want to consider. The first one is Opt in and Opt out this is a key requirement.

BG Yeah, yeah.

BA Can I ask you again, Ok. Can we do this somewhere else instead of (IT system), even temporarily?

RJ Why? Why Temporarily?

BA (Shrill voice) let me finish, let me finish, let me finish (voice appears very irritated). Because, I because look at the cost there!

RJ No No temporary means, sometime in the future the cost are going to …

BA (interrupting) may be may be …it will stay where we have eh eh there is no customers, in the first two years there are no enough customers.

IT A2 OK, BG just said no (IT systems) but still we will have some customers left in legacy systems (BG speaks in between and is garbled).

IT A2 OK so (RJ speaks over) OK So. The only way you want to do at the point of sales is to strategically own the customer.

BG By far the majority of the … (voice trails describes the requirement which edited out due to sensitivity)

RJ Is this a mandatory requirement in the business case?

BuA Could there be another option whereby we could bypass (IT system) (voice trails) if they make people go to (department x) to register (Adjunct capability of EH). If that was to happen it would bypass (IT system). We could give a super duper offers which makes them go online…..That's how we drive traffic to …

BG They can set up (names a component of DAM project) in the IT System and then go to Data Warehouse where (explains some solution option)…to enable the opt-in capability. <Designing on the fly?>.

BuA Can we not use our stores (explains another option) does that not reduce cost any way?

(There is a free for all talk that takes place each talking over each other, PG wants to know if the cost of IT is for defining a plan and IT answers that it is for putting details into systems. Ironically the function of SYSTEM INTEGRATION never comes up)

BuA Just to understand, just, just, just to understand – the $x.x M is just to build a separate web page in IT system to capture customer details and preference and things. OK, if that details were to be captured in (EH adjunct capability) then that cost will be…

DR Hang on, Hang On. How does the detail get into (system x)? How does it get on to (system x)?

BuA We save the customer (someone talks over)… eh eh there … (voice goes into shrill) there is a risk, I'd say that risk can't be that high if the customer goes on to (details the option)…

RJ The next question is there is going to be other changes in IT to work out … now what you do?

BuA Understand

BG I can make them go <describes another option to bypass IT system>

Siva Guys for my edification, (someone talks over). Just a sec, BuA made a very nice point here. She said that putting that web page er…in some other system like (system x) would save $x.x M dollars. So are we (IT) charging $x.x M dollars for putting one web page on an IT system? It does not look very good.

RJ It is not one web page. Multiple screens
(entire IT contingent pitches in with points here. People talk over identify functions, work flows, systems to be integrated etc.)

Siva We got to explain them. Not for me. It has to explained to the table because the feeling is, if you have $x.x M dollars and you don't justify why $x.x M for 1 web page, that calls for an explanation. Give them an explanation.

RJ Let me explain something else. Our friends should know.

Siva Right Fair?

(people talking over, DR brings about an order)

RJ	Correct me if I am wrong. (RJ draws a picture. Explains that a page built in (system x) still necessitates integration with a list of IT systems)
	(For the next 72 seconds, RJ and ITA 2 explain how the systems need to be integrated. The solution based on (system x) does not have real time capability (batch only) or customer service capability and concludes "So you can't bypass that")
BA	Then cost can be removed?
DR	OK, we have agreement on that?
BA	Cost in IT, you guys believe in building…. (others talking over)
RJ	Sorry guys, let me explain. RJ explains the flow of information between systems. So not in real time. Somebody goes and does something.
BuA	OK
	(everybody talks over)
BuA	Other option could be (she describes some scenario)
Others	Yes,
BuA	So can this $x.x M based on our conversation some of it
All	Some of it, some of it..
BA	Why some of it? Why not all of it? Why because you have to a plan then is it?
All	Talking over, there should be some configuration …
BuA	So you will not charge extra dollars for it?
RJ	BAU
BA	How much that will be? Can you just close that x.x
DR	(Claps to get everyone in order). Guys, guys what's the final landing on this?
	(IT folks busy calculating numbers… hear mumbling sounds)

RJ (asks a question explaining how a particular customer scenario will be supported in the proposed option. He lists how and what data will flow between the different systems.)

BuA Just. Just Sorry Just to be clear there are two scenarios right…
(BuA explains two scenarios and overcomes interruption from RJ)

RJ First one we agree, (explains how the second scenario will fail because of the working of the systems).

BA Someone's plan has been batched let's say (asks how something could be done in batch process) so why can't this be done the same?

BuA (explains BA that the batch process will serve for small volume of customers and not for a volume of multi million customers)

RJ There are so many needed…

BA If we take 250,000

BG I am the marketing!

(laughter all around)

RJ Could say 250, there is a program cost in the release as well.

DR OK do you want to come back with a figure.

RJ Can't comeback with the figure. Only way to comeback with the figure is to ask *** team to do an Impact Assessment. They would want signed off detailed requirement specs, IT design, Engg design and money. You can provide all of them now and I can get it done. At the moment I have none of that.

IT A2 Asks clarification on the scenario painted thus far and asks if the customer must be identified as the adopter of the new product.

BA Yes we need to

BuA (interrupting) No we need not

(BA, BuA and BG talk through)

IT A2 So you (asks an arcane clarification on how customers of different products are going to be treated)

BG (explains that the new product will give customer pricing advantage that will not be extended to non adopters)

RJ (on hearing all the discussions) this makes it a very manual process (sneering laughter)

BG So on X.X mill (asks some details of cost reduction because of process changes)

DR So what is our position on option 1?

RJ So if we say 250 +/- 100% that covers us up to 0.5 M. I am scared to making a cost without the guys …

DR One of the issues we have is we cannot go back (to the SLT) with costs with +100% variance. If you want a higher cost, you may as well come up with xK.

RJ What's your variance in MC paper?

DR We want to keep it down to 20%

RJ My estimate for hardware is $M +/- 100%

DR It can never be minus? Can it?

RJ No (below the breath)

DR So if we are talking for the first line item, if we put the figure lets say xK.

BA It is not going to move.

RJ Plus 100% not 20%.

BuA (claps) should we continue down this list.

BA But they have not made (trails)

BuA	I have lost some money, maybe I'll make little bit more losses before I discuss the right hand side items.
RJ	Sure you have to discuss EH there is a big
BA	Big what?
BuA	(in a shrill) why is that we can't have 25% tolerance? (RJ makes a comment lost in the din), at 25%?
DR	OK, next item.
IT A2	(Nominates a function for which cost will be given)
BA	Can we do data warehouse? Data warehouse? (32:40)
	(Bit of commotion the cost is declared as nil)
DR	Item3 function xxxxxx.

<End of transcript>

APPENDIX

11 APPENDIX – CBOY Project Documentation

11.1 CBOY Project Research Diary

11.1.1 Spiral 1

Actions 27 May -30 May 2008

27 May Jim reports the details of the new Spam problem. The new problem is effectively bypassing the reputation and content filters. The Spam appears to be coming from local sources (botnets) exploiting compromised TNC addresses. Jim feels that TNC is now a target for localised phishing style spam attacks and there are no options except to weather the storm.

Siva prompts Jim for options for fixing the problem and Jim responds that there no viable options to fix the problem. In his own words, "*we are had Siva*", *We have no other option except to increase our filtering capacity to match the spam volume*".

Siva reviews the present problem in the context of similar earlier problems where characteristics of mail headers and reputation of sending sites were used to stop the Spam. Siva tries to get Jim to think aloud.

< Siva uses abstraction technique to position the problem. Once problem is understood without its emotional baggage, Siva implies local leadership commitment to solving problem. Siva does not resort to rhetoric of innovation but guides towards it by implying the intent to find the ideal solution. >.

Jim has a light bulb moment appears to have got a spark of an idea, but still insists that the spam from local spammers is beyond solving.

Earlier in the year Jim and Siva met with a set of Spam experts from USA who feared localised spamming as the next big danger. Jim appears to be swayed by that opinion.>

Jim goes on to suggest that we block using TNC mailing lists from Internet

<solution options proposed albeit just one. Shift from no option to some option>.

Siva is not impressed and calls the suggestion as a stop-gap temporary fix. Jim Agrees.

As a team formulation strategy:

Siva advises Jim to engage Luc from SIG to work with him in this activity as a thinking partner. Luc and Jim have mutual respect on each other's competence. Whilst Jim is a suave 'customer presentable' professional, Luc is a typical back room programmer.

Luc is brilliant in his craft and can trial any complex concept innovatively but is more known for his irascible temper and being very temperamental. By role Luc was a system administrator but by skills he was a highly skilled IT security professional.

Luc is a keen explorer who revels in trialling concepts quickly, and who has mastered working the TNC systems without triggering TNC's complex organisational controls.

The SIG being a different division, Siva makes arrangements with SIG managers to have Luc work with Jim.

Spam experts from the USA who were recognised as world's leading thinkers in this domain were engaged to provide conceptual guidance to the team.

Solution Options

Siva wants a solution option is addressing the root of the problem be found. Suggests if global reputation filters could be localised or local versions of reputation filters be developed for TNC.

Jim was not convinced that he could do what global reputation filter could do locally. But, has another light bulb moment.

Jim comes up with IP profiling option which is the underlying model of global reputation filter. Jim is concerned if it will involve work beyond his ability.

<*risk of failure, fear of unquantified task*>.

Siva advises Jim to think about it with his partner Luc for the next two days and come up with either how to progress the option or why it should not be done.

29 May Jim approaches Siva for discussing solution options. Agrees with progressing the IP Profiling (IPP) option but proposes an interim solution of blocking access to mailing list of TNC from Internet to get some time to work on the final solution. Interim solution options and execution plans appeared to be clearly thought out.

Siva approves temporary fix and lets Jim have some time needed to do the IPP option. Siva does not set time line for the task.

30 May Jim advises temporary fix is in place. Does not discuss updates on IPP.

Analysis

The problem appeared unsurmountable until it was abstracted by Siva. Better thinking commenced when the problem was compared against earlier contexts and the solutions that addressed them; in other words, positioning the problem in a context aided in spurring solution options.

During these discussions, subtle reassurances against failure were provided in non-verbal form, such as getting deep into solution discussion, seeking better alternatives and probabilities of success of different options, all of which implying a keen desire to get the right thing done and willing to support any reasonable endeavour towards it. The communication during the interactions thus implied management's risk appetite. There was no explicit offer to underwrite failures as Jim was not totally risk averse individual. However implied assurances of risk tolerance were provided to reassure the natural risk taking mindset of Jim that risk taking will be encouraged.

Expectedly; Jim agreed to come up with proactive solutions.

Siva did not put time pressure on Jim. But every option Jim suggested was subject to" go – no go" decision based on rigorous quantifiable facts; the pressure was on providing quantifiable facts. The events led to pushing people to think, think outside their comfort zone without them slipping into the untenable ground of 'more investments' and other despondent demands that shifts the focus of the solution outside the control domains of Siva and Jim. The emphasis Siva was putting was that more could be done in what TNC currently have.

Doing more with what we have leads to innovative outcomes for the human mind is not shifting the problem to domains outside their control but is focused on solving within its means.

Later Siva understood that the IP profiling toolkit was available in the global reputation filter but it needed to be dismantled from the stack and repositioned within the Spam Management Architecture. Such moves are fraught with the risk of operational instability.

It was the fear of failure or not quantifying the work involved that led Jim to discounting this option in the first place.

Gaps

Even stellar performers like Jim who had displayed earlier risk taking behaviour was slipping into a risk averse mindset.

Jim was willing to paint the problem as big and hairy (usual trait in TNC) and get intimidated by it as well intimidating the rest of the company.

Jim was willing to run with the first option identified rather than explore more. For a star performer who has demonstrated keenness to find leading edge solutions, this stance was perplexing.

It appears Jim has assimilated the practice of TNC projects where the projects run with the first option and prove that is right by floating alternatives that are untenable.

Jim was filtering off details that would open avenues for further exploration of alternative options. However he was freely providing details when probed.

Is this an implicit mental model where the subject assesses subconsciously the commitment and interest of the manger in this situation? Later Jim explains informally that he is sick and tired of engaging OG and SIG to have solutions implemented.

11.1.2 Spiral 2

Actions Planned (2 Jun – 4 Jul)

This covers both Design and Implementation of actions. Some actions were developed and implemented on the fly as the data was being analysed whilst some more were identified for implementation later.

Work the mindset that makes problems unsurmountable. Do this without lecturing, just ask questions and imply that I am not impressed with his stance.

I must imply that I look for serious alternatives, rigorous evaluation and judicial choice of options. This does not call for new processes or documentation but a disciplined thinking where choices can be articulated and debated and defended.

I must imply that I am interested in taking reasonable risks and I am keen on solving this problem.

2 Jun — Jim approaches Siva to provide a full picture of what is needed to promote IP profiling. He wants to fix a few other operational issues before commencing on this task. He is mulling on the problem to come up with an implementation solution that is effective. He has not told the details behind the IP profiling but it is apparent he is mulling the problem to articulate the details that will be scrutinised. <*This was a subjective observation Siva made during the course of this conversation*>

6 Jun — Jim provides an intense briefing on the end to end Spam protection infrastructure currently in play at TNC. He is still thinking as to how to move the function embedded deep in the second layer to be the top of the stack.

As a stop gap, Jim comes up with 4 options to fix the Spam problem. Of the options an option codenamed Cowboy was attracted the attention of Siva. This option will only take a few minutes to implement.

The CBOY option calls for dropping all mails received first time. The legitimate senders will try again whilst spammers who operate on shoot and scoot mode, will not try again for they would neither have necessary capability or they would fear being discovered. Here we exploit on the feature of good design practice specified by standards bodies which is likely to be ignored by shoot and scoot spammers. Jim is hesitant to choose this option as it is radical and departs from 'accepted practice'.

However a better fix is needed to handle other variants of the current problem and this could be solved by repositioning the existing IP profiler at the top of the stack.

Jim has bought time to think and implement this solution. He is thinking. He was not negative, appeared charged to make this happen against any odds.

10 Jun — Jim initiates implementation of CBOY solution to stump the spammers.

CBOY option is likely have no impact on operations and TNC could reverse the CBOY implementation under 48 hours. Siva underwrites this risk.

Analysis

The reluctance to adopt this option was twofold, (1) ethical dilemma – not a good practice, it departs from agreed good practices conventions; and (2) risk dilemma – what happens if it fails? Who will support me during the 48 hours it takes to roll back?

Siva steps in to resolve both dilemmas.

Ethical dilemma wad resolved through debate and discussions where Sun Tzu was quoted, current intelligence processes were quoted to convince Jim that standards apply for good people and not for crooks and one has to counter crook in their turf. . The issue was discussed with CIO and his clearance was also obtained. Key factor here was that Jim was won over, he came out convinced that he is not compromising. This is probably the Supervisory Support Amabile mentions and Executive Support / Buy-in as Glor states.

Risk Dilemma was simple to resolve where Siva underwrote the risk that let Jim progress the solution with speed and enthusiasm.

25 Jun Jim updates Siva on progress. Jim was off on other pressing tasks until today, plus he was very distracted with the arrival of his new baby amidst several medical complications.

The implementation is on hold as the usual resource that does this task was on two week vacation and he did not want to push it with a stand in resource as educating him on the nuances of the reasoning would be a complex task.

Jim is convinced about the path taken in this task and is very pleased that it had support from the management which is Siva and his chain of command.

30 Jun Jim declares, Cowboy solution is in place

1-4Jul Jim monitors situation and reports no negative impacts from the solution.

Provides proof of significant improvement in Spam control. Options open up for further breakthroughs.

Analysis

During daily follow up, the thought processes was checked that signalled direct and hands on management of the activity by Siva without transgressing the autonomy of Jim. During such daily interactions issues like dilemma of ethics in using Cowboy Solution was addressed. This approached worked in two ways (a) letting the managerial support be felt and (b) mentoring the resource to be savvy on such issues going forward.

When Siva was happy for the outcome to be innovative a surprised Jim, catching the first time use of the word "innovative" asked Siva what constituted an innovative solution.

Such open questioning was a measure of trust that existed between Jim and Siva or the environment was open enough for that response.

Siva explained it as - Innovation manifested in the characteristics of the solution (out of the box, future proof, configurable, respond to emerging requirements that are not known now (threat models in this instance)) - and Jim was happy for its practical connotation.

11.2 CBOY Post Implementation Review Transcript

8 Aug 08

Interviewer Prof Ken Dovey (KD)

Interviewee Jim

KD What are we two trying to do here is just Siva has had his interpretation of the project and what I am trying do is to get some degree of objectivity …

Jim Yep…

KD So my idea is to come and interview you on your experience of the project and see ultimately weather we will triangulate the process and see what you understood happened is in line with Siva's thoughts were.

Jim Yes. Sure.

KD OK we are talking about the project, the Cowboy project you were involved.

Jim Yes, Correct.

KD Just… Just…Briefly tell me what was your experience of the project.

Jim It was a part of the longer project, longer initiative to reduce the influx Spam that we get.

KD Hm Hm

Jim Hm So Hm we … trial and test many techniques. We talk about many techniques, amongst the staff and we do lot of research on the net (*Internet*) and we… look at lot of Spam and we

KD Hm Hm

Jim We look at the behaviours of the Spammers and what they are doing and all that sort of stuff. So we noticed, hm..hm.. you know, we through our searches, through our conversation and I ..and another technician who works and operates the mail gateways heard about this particular technique which we call

'Cowboy'.....which is the DNS no listing technique. And hm.... We both sort of identified ..that it had some potential and we both thought, OK add that to discussions as a potential control method for ...keeping the Spam down and .. fight him in the future.

KD Hm

Jim So it's a sort of ... a constant arms race where you keep an arsenal of future techniques you know and things that you are doing at the moment and you constantly figure out what the enemy is up to.

KD OK...

Jim So you use the right arsenal against the right techniques of theirs.

KD Umm What was your evaluation of the project? How did you feel it panned out in the end?

Jim mmmm I initially .... I ..... wasn't .... pro putting it in.

KD Hm

Jim So, being completely honest, I thought something we should evaluate and have a look. My initial reaction was that it is not a mainstream technique used. So.. it is a little bit of a ...'security by obscurity' Which we ...

KD um

Jim Traditionally we go away from that, but it.. it... that can be very powerful control as well. So initially I had a fairly negative approach to it. Along discussions it picked up quite a bit of popularity. And.. And.. Yeah it was decided that .. we can try that without too much of harm....without too much risk and once we put it in, it was quite clear that it was very effective and a really good technique to use in the battle.

KD OK

Jim Yeah. So. So, ultimately even with a negative opinion, ... to start with ..... it was quite clear.. it was a very good measure.

KD So the approach was somewhat unusual..

Jim Yeah

KD Hm So Help me understand how you got into such an unusual approach and you were initially hesitant as you said…

Jim Yeah

KD What facilitated …. the effectiveness of this approach.

Jim Hm.. The … The … Hm ..Well finding the approach was one thing, like that I

KD How did that happen?

Jim That happened …. Just by …. Researching on the Internet and looking and correlating , honing of our research into what is happening in our mail gateways and how the spammers were attacking our mail gateways. …. So it was quite clear that they were attacking in a certain way and only attacking our first MX record that was available and hitting that very hard. And … we also noticed that …. Um ..Just pushing them off-kilter or giving them an unusual response, really that the spammers didn't handle very well. So it had quite um … it has quite a lot of potential to work very well because often the spammers use not very intelligent techniques to try and get past the spam defences. Sometimes they use very intelligent techniques but quite often they are hitting their head against the brick walls trying to get through. You know with brute forcing.

KD Hm …

Jim So seeing this brute forcing and seeing it …um … move in such a direction um… that was not very intelligent, We thought we could use such a blunt instrument as this to put them off.

So, yes … from the way ….and the behaviour for the last couple of months, the way the spammers were going and their behaviour in the last couple of months, (sic) um… gave the ..solution merit and gave it possibility.

KD Hm..

Jim So, it is a combination of the type of control it is and the behaviour of the spammers.

KD OK, you mentioned it was an unconventional approach and there were risk aspects involved and it wasn't part of the mainstream

Jim Yeah

KD Approach? What gave you the courage to take this on?

Jim Um… probably, Siva's encouragement. (laughs) and his take up of it.

KD What form did that encouragement take?

Jim Hm.. Basically the acceptance of the solution as a viable option, and …. and …to give the management support…and sponsorship to push it through.

KD So, as a matter of fact ….. in a sense he took ownership of the risk.

Jim Yeah. That's right. That's right. We will…. The way its happened in the past, is we will, the way we come up with methods, techniques in the past, basically we workshop ideas and throw them around, and when enough good ideas percolate, and ones that seem to have merit percolate, we list them out and every couple of months take them to Siva and tell him where we are going in the direction of Spam.

KD OK

Jim And he will have his input as to which ones he thinks as really good and which ones he not that interested in. You know, usually it is very much that they all look good and lets go ahead. This one in particular he want to push through quickly.

KD So he behaved differently in this project to the way he behaves normally?

Jim Um.. He is always very accepting and very encouraging. But in this one in particular, I think, not, not, like outrageously differently, he was very supportive of it.

KD OK

Jim And probably because I was less supportive of it. I sort of held back as a last option, (laughs) to be used and the one I was least favourable to…

KD What underpinned your reluctance to go with that initially?

(Jim's voice level goes down considerably, too many pauses and incomplete sentences make this section.)

Jim Um.. I think a puristic (sic) approach. You know to have a … just to .. what I mean by that is … yeah to be …. To try and keep our spam measures to be mainstream, I guess.

Personal: puristic (sic) approach

KD Hm

Jim And very clear cut…

KD Why did you have that orientation? Do you think…. I am just trying to probe into why you approached it that way in the first place.

Jim I think that there is many measures that we could take which could be quite radical and …… quite risky. Umm you know .. this thing we can do …But we have taken a fairly risk averse approach obviously with corporate network where we don't want any emails dropped or emails delayed. So we … steer away from … Oh yes, I am all favourable … for those measures that present no risk.

KD um

Jim Umm Yeah that probably what it is.

KD Basically

Jim (Interrupts) and no uncertainty. That is…

Here Jim reveals that he is inherently unwilling to take risk. His fears of consequences of failure steers him from options that he deems risky. Note the slur, pauses and incomplete sentences from a relatively fluent speaking man. He finally lands with the statement "I'm favourable … measures that present no risk". They indicate that he is unable to substantiate his position. In a sense they are like repressive memories or monkey behaviour. It is up to the leader to nurse them out of the risk averse cocoons and encourage them to take appropriate risks.

KD So it is the fear of consequences, the negative consequences that could come from a risk

Jim Yeah Absolutely…(cuts in)..

KD OK

Jim Yeah… There was a fair few …. Couple of unknowns in this one. And not that is.. not that it is… you couldn't roll it back…You could roll it back within 24 hours.

KD Um..

Jim It wouldn't have been a problem and everything would have been back to normal.

KD Um

Jim So the risk is very low… there are few unknowns….My other reason for reluctance is … probably be that it is not a measure … one of the larger company to take up……

KD Um, um

Jim So it is not something that Hotmail or Gmail or IBM would take up. I would imagine.

KD Why would you imagine?

Jim Um… um … it is … its sort of half …the .. the … approach is slightly ….breaking the system ….or breaking the … of having one of our mail servers that is available not responsive.

KD Um..

Jim So it actually looks like one of your service is unreachable. So … having that … uh….having that the case .. we could have people complaining, "Hey why your mail server is down?"

KD Um..

Jim It turns out that it does not happen at all they fail back to the secondary and tertiary mail service. But I can't imagine a large corporate or a global corporation doing it as a part of its global defence.

KD Um,,

Jim Yeah

KD The risk is too high?

A (Jim's voice is booming back to its original level, speak language is confident now)

Jim I don't think the risk is too high. I mean technically I don't think the risk is too high. But …it… if…um .. it might have the impact on … reputation. .

KD Um

Jim of the company. So they use this.

KD Um..

Jim It could be viewed as that they use these unorthodox methods to block spam.

KD So you think the same would apply within TNC that the reputation of IT function is at risk?

Jim Um… I don't think so (he drawls and sighs). This is only a concept I have that you know that I would … I wouldn't like to receive the email from one of our major partners like IBM of HP whom we deal with a lot saying that, "hey we notice that one of your mail servers is down and it is delaying our mail" and us responding, "no that is a part of our mail anti-spam strategy". Laughs…

KD Laughs …

Jim That's right. You know that's the sort of … you don't want to be looking like you're a shonky shop. The other side of things is that its a .. hm.. you got to play the game with the spammers. If they're using a certain tactic and you have to use certain tactic back.

KD Um

Jim We use other measures that causes a lot more problems than this has ever caused us.

KD Um

Jim And you know, lot more admin problems. I think…my hesitance is being a bit conservative really. I don't think there is too much for a damage of reputation.

KD OK, Now I think you're taking the experience into another project, is that right? Your are moving on to something else now.

Jim when articulating his own reservation discovers that the risk he feared was not a quantified objective risk but a subjective assessment based on the fear of consequence.

Jim Yeah..um… it's a good … I guess it is a good …way of thinking of of other ways to stop spam in a larger scale for the parts of the business that receives lots more of emails and lot more spam that is our ISP business. So there is ways in which we can take this principle in other areas of business and make it successful there as well.

KD Are you in the process of doing this now?

Jim Um.. I think we are in talks… in concept right now. I don't think anyone is being engaged on Siva's side but I have a few ideas on how this may happen on the gate way level and things like OK…….

KD In some ways the project has changed you, your conservativeness has diminished.

Jim Yeah (laughs)
Personal: Shedding of conservatism .

KD (Laughs with Jim) Your to … to take on something like this….

Jim Yeah. I think I am still a conservative at heart. (Laughs)

KD (Joins the laugh)

Jim But I am… I think …. I think…. Eh… learning from this….is the thing that I'd take away is that … em,…. It is worthwhile even taking unorthodox approach if there is no risk in rolling back and if there is .. you know … if there is … really the risk to the business is small, the unorthodox approach is well worth a try.

KD OK Interesting (mumbling almost)

Jim Yeah

KD And you think Siva has learnt anything through this process?

Jim Eh .. um… (pauses)

KD Have you seen any changes in his style? Leadership style, Management Style….

Jim I think … er…. (pauses… sighs) I haven't thought about that much. He's .. I don't think he has altered his behaviour too much. I think he has … he has always been very supportive of the spam measures I've presented to him …eh

KD Um..

Jim And in this case it is a little bit different, he … he is obviously able to spot something of merit quite well. Sort of seen the wood through the trees so to speak. I think he has been pretty good at that any way. I don't think his behaviour changed too much.

KD But in his management behaviour…

Jim (clears throat). Not markedly. I don't think

KD Ok Ok

KD You have covered all my bases, anything from your side, anything unusual, that you think might contribute to what we are trying to achieve through this process.

Jim Er… No it is worthwhile telling this that I don't come with these things and I lean heavily on other technical experts and research on Internet and things like that. So I cannot say these ideas are brand new or fresh off the brain. And they are percolated and very much seeded from other sources and some of the best things that came from inside of the company from one particular operational staff (trails into a mumble). Really good technical people there.

KD Is that fairly common for that level of collaboration happen in projects or was this unusual to have that degree of collaboration?

Jim No. We definitely have that much of collaboration for Spam. We have particular guy who is technically a brilliant fellow… who has taken quite an interest in Spam measures….

KD um…

Jim Fighting the spam like that. We talk often probably fortnightly on how things are going there and what next step is… all that sort of stuff. Oh yeah, there is a real culture of collaboration workshopping and …

Jim fails to recognize informal meetings and telephone calls to the resource many times a day for different facets of similar class of problems as collaborative interactions. It is these micro interactions outside of formal meeting on topics have built a mutual trust between them and hence effective collaboration.

KD And that is historical and not just this project

Jim Yeah, that is historical, That has come through probably about 2.5 years been doing that (trails)

KD And did those people have the same reaction like you initially to this strategy?

Jim Hm…No they have been all forward. The particular fellow who has suggested this is all forward from the start. (laughs). Wasn't hard to get his support.

KD (Joins the laugh) They were ready to go, sort of attracted to the challenge.

Jim Yes, that was right. That was right. The other beauty to the solution was that it was probably about 5 min worth of work changing an MX record and … DNS entry in a text file, a line in a text file … and then all the work was done. That was the beautiful thing about… (laughs)

KD Hm..

Jim Usually the spam control measures go through a whole bunch of testing, whole bunch of putting on the development machine and on test machines and then raising the change request and then putting them in (trails)

KD This is a very smart solution….in many ways

Jim Oh if the degree of work to put it in is a measure of its intelligence, yeah then it is a very intelligent solution to the work we have to do.

KD You have also been saying that it has been extremely effective

Jim Yeah. From our logs and measurements. Yeah…(trails)

KD Jim thank you for your time, your honest and your .. great.

Analysis

The individual's assessment of risk is based on assumed factors or mental models e.g. 'this is not done that way', the chances one would be pulled up for this activity (e.g. IBM or HP asking about this) is unfounded as logically they will not notice it. But the mental model of the individual saw this as a risk and a no-no. The individual was unable to articulate the risk cogently and was struggling for words, this is akin to the monkey not reaching for the bananas. The collaboration as perceived by Siva and the individual varies. Individual consider collaboration as the 'formal' interaction and all informal trust building that happens where major decisions are made is not considered as collaboration. Leadership practice should promote the informal interactions and let the individuals realise that collaborations happen only in formal meetings. This does not alter the mindset but uses it to the advantage of the situation. Adopting non-conventional solution is a major shift in the individual. Further tests will show if this behaviour is repeated with or without leadership work practices.

APPENDIX

12 APPENDIX - IHC Project Documentations

12.1 RESEARCH DIARY - IHC

12.1.1 Background

Apr 2008

Pressure from PMG was mounting to lift restrictions on downloading applications from Internet on to IHC devices.

Siva requested SIG who were managing IHC to explore options to secure IHC infrastructure against the risk of downloading applications from Internet. Siva suggested that SIG seek IHC vendor's help in resolving the problem including evaluating the option of placing the infrastructure behind the TNC firewalls. SIG were dillydallying on this activity on the directives of OG who wanted to settle political scores with SG.

Siva held meetings with IHC, SIG and OG to discuss the way forward. During the meeting, IHC supported the option of placing the IHC infrastructure behind the firewalls and provided documentation supporting it. OG opposed this recommendation citing some hearsay operational instability issues at another corporation when following this option. OG demanded proof from IHC that their suggestion will not adversely impact the TNC operations. IHC vendors, sensing political fights, changed the tunes and advised TNC to test the suitability of their option before implementing.

With a disengaged subject matter group SIG and recalcitrant OG, SG was wedged between a rock and a hard place. SG was under pressure either to come up with an acceptable solution or lift the download restrictions and face the security issues.

Siva decided to handle this activity as a project under his leadership with Reg as the lead. To supplement the loss of expertise from SIG, Siva enlisted the IHC vendor support for this exercise.

12.1.2 Spiral 1

May 02 Siva assigned his staff Reg to this task of finding an effective solution to the problem. Initially Reg was very defensive. Reg was arguing that it was neither his responsibility nor his field of expertise. In his words,

"Siva, I know nothing about IHC. It is not my job responsibility. You are setting me to fail. I will not do it."

Reg feared failure as he is venturing into an unknown domain. Siva tried to motivate Reg by appealing to his technical ego. Siva drew attention to the forensics investigation techniques and end device finger printing software Reg developed. These were domains on which Reg had no expertise at the start but stepped in at an hour of need and became an expert in both the areas in a very short time.

This appeared to thaw Reg a little. Reg was worried about the political interference that would lead to his efforts going to waste and be saddled with failure. Siva reassured that Reg will be measured on what he tried and not just on the outcome. Siva also drew parallels as to how Reg succeeded in the two earlier challenges despite beginning with the same trepidations. At the end, Reg reverted to his old position and refused to engage. Siva suggested that Reg think it over during the weekend and revisit this next week.

Analysis:

Reg was right; IHC was not a domain of his expertise. Reg always displayed negative mindset until he was comfortable with the problem. Reg being a risk-averse loner will jump into activities where he is not in control. Siva decided to work on the mindset blockages of Reg.

May 06-08 Siva picked up the conversation with Reg from where it was left the previous week.

Like a reluctant child, Reg came up with excuses ranging from availability of manuals to availability of instruments to test.

As a show of leadership commitment, Siva obtained an IHC instrument and all the manuals for Reg. Siva introduced Reg to IHC customer support technicians (part of TNC) and their manager to build an alternate network of subject matter experts. In parallel, Siva introduced Reg to IHC vendor executive who manages TNC account and arranged for interactions with IHC technical specialists outside the scrutiny of OG and SIG. <Siva facilitated the networks for collaboration or at the least a team of thinking partners for Reg.>

Siva provided Reg with a course of action where the first task was to understand IHC technology and its implementation at TNC followed by solving the problem. In crystallising action course, Siva consciously separated emotions from facts, excluded the issues relating to OG, SIG, stigma of failures etc. and zeroed on the tasks on hand which was to understand the IHC the technology and its implementation at TNC.

Siva offered some time off to Reg to work on this activity. <exhibited local leadership commitment to the task>

May 12 Progress was very slow and more excuses and reluctance from Reg was observed. Dealing with Reg was like handling a reluctant puppy. Reg did not avail of the time off offered to him. He was avoiding taking a plunge in the problem.

Siva decided to kick start the activity by engaging OG, SIG and IHC vendors. He organised several phone conferences and was working on a face to face workshop at TNC premises.

May 16 Following the discussions / phone conferences, OG came up with a 90 page design document at a substantial cost to the project. The document had a full copy of IHC manual and advised an obvious solution of relocating the infrastructure behind the firewalls. The document lacked details on how the design could be implemented; it did not address the performance issues the group had earlier raised. It estimated the solution to cost over $300K and six months to implement. A closer review indicated that the cost might actually be twice the estimate and the risks of failure were very high. This design document added no value to what was going on excepting to confound it and reiterate OG's position that nothing could be done to solve the problem.

May 21 The workshop Siva was trying to organise with IHC, SIG, OG and Reg eventually takes place after several false starts.

The workshop did not add any value. The vendor was noncommittal and broadly advised to test the options and decide for ourselves. They did not want to upset OG.

Reg was very content in taking minutes and being a passive member instead of driving for a solution.

OG pressured Siva to abandon the project and lift the restrictions on download.

Despondence descended on Siva and Reg.

12.1.3 Spiral 2

Learning IHC & Ideating for Solution

May 23 Siva started discussing with Reg to understand the progress on his reading and work done thus far.

Reg had not gone far with his activities. Instead, Reg flared up and declared that this was neither his job nor his expertise and accused Siva of setting him up for a failure. He reverted back to his old position of being defensive.

Siva resorted to motivation. He drew parallels to the task at hand and the earlier successful works of Reg such as surveillance and monitoring tools development, where Reg had to learn new domain skills through self-exertion. Siva reaffirmed his faith and trust on Reg's ability and explicitly underwrote any risk of failure on this task. Siva once again offered to rate Reg's performance on the efforts he put in exploring the IHC technology rather than the outcome the activity produced. This appeared to have calmed down Reg but he was still unconvinced.

Reluctantly Reg set out to learn about IHC and took up the offer of two days off and 'working from home' to facilitate disturbance free learning.

May 28 Reg called Siva very early this morning. He has identified certain features that could be configured in policy settings that would enable what we wanted to do without any cost or effort. In addition the options could enhance the other features that were being used. Reg goes about explain the details (details suppressed).

The solution Reg was outlining removed the need for relocating the infrastructure to protect the IHC from downloading inimical software.

May 30 Reg progresses this idea with SI organization. Teamed up with a few friendlies there to test out options. Unsolicited, Reg finds a few friendlies in business (sales) and leverages their participation. Within the day he sets up a pilot group.

The pilot is a great success; the solution is delivered to SI for rolling out.

Analysis:

Siva never used the terms Innovation in the whole exercise. Siva practiced unusual levels of patience, listened, assuaged fears and handled the participants with kid-glove.

Siva demonstrated persistence and focus, implied management commitment to the task and personal desire to come up with innovative solution.

Siva engaged in leadership practices of removing reluctance and promoting engagement and participation.

Regular reassurances were given to Reg that he is supported and his risks are underwritten.

All short comings were accepted but the conversations were never let to meander around negativities.

When Reg commenced his work, he for the first time in six years turned very collaborative, relation building, boldly trying out new concepts. Success opened up new positive behavioural traits in Reg.

12.2 IHC Post Implementation Interview Transcript

8 Aug 08

Interviewee (Reg)

Interviewer Prof Ken Dovey (KD)

KD Reg first of all, the project itself, how did you get into it?

Reg Hm… One of those things you fall into, you know, hm..No one else is available, OK, I'll do it. The usual things (voice trails)

KD OK. Who initiated it?

Reg Um.. that was one of the directors who at that time, I think was an TNC director is now director of A**t. ….. and he started, kicked up a fuss that his staff needed unrestricted access to the IHC Infrastructure, they have to do able to do everything and anything with their IHC because otherwise the whole world will come to a grinding halt…..the usual thing…(voice trails)

KD (laughs), OK. And the…

Reg Revenues, revenues …all our revenues would go…. (voice trails)

KD OK. So you were tasked to make this happen.

Reg Yes, to make it happen securely. (laughs)

KD Securely OK (chuckles)

Reg … the problem was, that the infrastructure was originally only ever put together eh.. for 50 users in a trial…Based on the trial basis, it was never intended to be a production solution. And at the point we are talking about 2000 users.

KD Um..

Reg And the position it was sitting in the corporate network dead-set bang in the centre of the corporate network.

KD Um..

Reg um…. And my thoughts on people having unlimited access to it … were immediate terror.

KD Um.. So how did you overcome those fears, feelings of terror. What facilitated the fact in the end you took it on and … I'll talk you about that ..that comes later… But initially how did you manage your fears and your own terror.

Reg (starts talking in low voices when KD says 'but initially…") Why did I say as terror…

KD (laughs)

Reg um… it is the fear that what you know that can go wrong if it goes wrong. Um,,, (sighs.. mumbles) Are we going to be able to say no? is the first thing you think of.

KD Um

Reg And.. Director … We are not going to say no. So we have to do mitigation.

KD Um

Reg Then you look at different levels of mitigation and … First mitigation is take the infrastructure, move it to somewhere firewalled; And where if anything goes wrong the whole world doesn't fall around there is… And that's… that's ideal solution.

KD Um

Reg And that's the path we went down initially

KD Whose decision was that?

Reg Em.. We .. we Everything we do in our group we all bounce ideas of each other.

KD So there is a history of collaboration in your group

Reg Yes. We always.

KD What facilitates that, because some people might see that as unusual?

Reg I don't know if Siva had told you; we actually had a communications person sit with us for a day and one of her comments was that she has never seen a team that interacted in the way we do.

<Reg is referring to an ANU researcher who was doing an ethnographic studying work place communication patters specifically how we use our electronic media in our day to day activities. The comments Reg alludes to her is very accurate and factual.>

KD And you put that down to the personalities of the individuals

Reg How lucky .. we have a really really good team and so he can't hear this, a good manager.

KD So that's Siva

Reg Yes.

KD When you say that as good manager, what do you mean by that?

Reg Um.. Especially someone like me, I am 50 years old, I don't want to be a manager, I don't want to get into the politics too much, I am technical hands on person and **I love my technology**. I need a shield from all the other unpleasant c**p that goes on in the other side. And he is an excellent manager for that. He understands the games, he knows how to play the games. He knows how to get what we need.

KD So he creates an environment in which you can perform at your optimum.

<KD and Reg talk over each other concurring on what was said.- unable to transcribe that>

Reg But there are people like Jim who is an upcoming youngster (laughs)

KD (joins the laugh)

Reg I see big things in him in the future. And Siva is doing his best to nurture him. So he is pushing him that way. Whereas me, I am staying in my comfort zone.

KD Ok. Ok. If we go back to the IHC project

Reg (says something very feebly)

KD No no that is absolutely essential to what I am trying to do. Em.. How would you evaluate it? Would you say thus far .. how effective it has been? (trails)

Reg Em… Well …. In the end that was plan A. We then had plan B… em.. which was If plan A didn't go ahead we need something else to fall back on.

KD Hm..

Reg The first choices hardly ever get successful, traction and you always have to have a plan to fall back on. And the second one was that we would have to provide more control over locking down of the devices to prevent the nasties that could occur getting as far into the network as they could so.. That was the other alternative. .

KD Hm..Yeah

Reg Em.. the problem with that is it then restricts what some people can do…Its also then higher admin problem because you have to end up with having groups of people with levels of ability. And having all sitting in one set of infrastructure, you can pretty much give open rein and let people do what they want to do. Knowing that they are not going break everything.

KD So how far has it got now? Have to choose option A unless it works….

Reg We chose Option A, and we had it costed, originally we had a quote from SIG for their part which was round about 18-20 grand, We thought that it was not a problem but the problem was it turned into a project. Eum…. Which involves what I call the usual hangers on, which are multiple architects from networking, from various IT groups, project managers and additional subject matter experts,. So we really end up with a cast of 1000s.

KD Who turned it into a project

Reg Hm..That is out Siva's, that's that's decided outside of Siva's .. um,… decided by the group um… that has semi responsibility for … end of the day has responsibility for the infrastructure (*OG*). They decided that it will have to be a full blown project.

KD Um..

Reg Even though what we are actually doing is moving it from one network to one virtual network which in technology terms is not a lot. Not a lot. But they managed to turn this into as I said, a three ringed circus.

KD Why did you think they did that? Why did they choose that option rather than the easy option?

Reg If I'd have understood, probably I'd be a ….

KD (laughs)… What's your guess?

Reg Everyone …. Again …. Its political thing. Everyone wants to be seem to ….its its… (voice trails into a hush)

KD I understand what you're getting

Reg People seems to … say things and do things just make themselves to be noticed and appear to be doing something wonderful. But at the end of the day, what they are really doing is creating a road block. Instead of just getting on with that and …..

KD Em.. Em

Reg I mean ..

KD So … basically they want to be a part of something that has got a high profile
Personal: part of something that has got a high profile

Reg That's right. It seems

KD To the people of the top … (voice trails)

Reg At the end of the day my other solution Plan B was to work closely with the guys who support the IHC. And through a few Change Requests and a bit of some subtle testing with some contacts are made through the back door with the people who understand the IHC as to how it works as opposed to … (trails)

KD Em..

Reg The IT people who manage the boxes. We did some testing and came up with the smallest policy changes we could, that would give us the maximum protection. Um. We tested those and so far it solved altogether (voice trails)

KD Fantastic (very low voice).

Reg And.. virtually zero cost.

KD Em..Fantastic (in low voice)

Reg Ideally I still don't like it. Because there only needs to be a problem such as we have recently (sic). There has been a Trojan where you can actually, with a PDF file, an acrobat document, you can execute arbitrary code on the server that is hosting the process. Now in the IHC environment, the major IHC server could be forced to execute the arbitrary code. Now as that server is sitting in the middle of our Administration LAN, I don't want that to happen. If it was sitting in a fire walled LAN where it only had restricted traffic going through, OK we are going to lose some IHC stuff, not the rest of the corporate gems.

KD Em. Em..

Reg So there is always still that fear that something could happen.

KD Em.. How far it is in the rollout now?

Reg Oh.. it has been running now for weeks, months,..

KD OK

Reg It. It. Its … we had a couple of hiccups where couple of things didn't quite work properly and made couple of tweaks to the policies. Again because it is just tweaks to policies. We have to put a Change Request through (voice trails)

KD Best xxxx it is working

Reg Still, But still as I say I am uneasy, if something, software has a habit of breaking as you are aware. If something breaks, we still have the potential to be exposed. But from normal day to day threats we are probably (voice trails)

KD Is there anything that you see that you could mitigate that risk at the moment, is there anything that can be

Reg Outside of .Plan A as we call it?

KD Yes, Yes

Reg Em..(long pause) its all about user education, you know user awareness. And the problem is that even from our experience recently from the recent virus incident

we had…people still do not understand the basics of what to do and what not to do. Even in a technological environment like this, they still do things like they see an attachment and click on it and see what it does. Jim and I spend the next few hours to the nights working cleaning up.

KD So it is a human problem.

(both talk over each other)

KD educate and educate till cows come home, people still going to make the mistakes.

(both talk over each other)

Reg Have you seen this a new game, download this new game, it is great, you can play this on IHC on the train. They don't realise that the new game has a really nasty bit here. (voice very soft). What we have done now (voice raised – normal level) that every time someone installs something in their IHC; first of all they have to put their IHC password in and secondly it would check about any connections. It won't allow connections back into the network.

KD Good.. Whose idea was that?

Reg That was mine. I was looking through the policies, IHC policies

KD (laughs)

Reg Pages, things you could change, settings you can change. What I did was I went to the DSD site and the DSD had standards for internal use of IHC and that was obviously not going to fly here.

KD (laughs)

Reg But what I did do was glean some really interesting ones that I could get away with here.

KD yes..

Reg (scilence)

KD What role did Siva play in this project, in its rollout? Other than what you have already told me in terms of buffeting you from the politics and the….

Reg Well I mean when I need to push people, sometimes I needed to push people, SIG for example will need little push higher up. So actually to get the traction to do some of the changes I wanted. I'd just hand over to Siva.

KD So he breaks down the barriers that are holding the process up. Does he facilitate any new insights? Any new network for you? In terms of connecting you to sources of knowledge and information?

Reg Well, ….He never sits himself between me and whomever I am working for. He'll always say that this is whom you are dealing with and I'll build my network from there.

KD Ok Ok good

Reg There was a (*TNC*) director HC who turned out to be a very useful ally.

KD OK great

Reg Rather than me having to go through him to the director, I went straight to the director.

KD OK, how would you classify this, would you see it as a break through innovation or an incremental improvement?

Reg Em.. I'd see as a successful simplicity. Not 100% success. The perfection in me ,,,(trails)

KD (laughs)

Reg There is a 80/20 rule you know; usability vs. security. Um… I see as a success in probably risk mitigated in the majority use of IHC

KD Did you take any key learning from your involvement in this specific project? Anything changed in you, any new insights, new orientations?

Reg I think, about few confirmations that …..again, I've been here 10 years; avoid creating a project unless you are trying to stop something.

KD Hm..

Reg I know it sounds terrible…

KD No, No, it is interesting

Reg I have in my past actually proposed something become a project because I didn't want it to go forward.

KD Um Um..

Reg Not in this group (hastens when saying this), In my previous group, I was a security architect in the architecture group and there was this (voice trails into mumble) wild idea,. I said this is a good idea, let's get a committee together in a group and start discussing it. Six months later it was dead.

KD Um.. Um.. Why? Why (in a hush)? (laughs.) Reaction to you or reaction to any idea?

Reg Hm…..No because so many people with so many different …. (pauses)

KD interests? (low voice prompting)

Reg Interests …. I am trying to think a word for it (in a hush) ….. I don't think I have a word for it … but … it ….. They all have their different agendas. Everyone has different agenda and those agendas will never meet. And it will just go round and round in circles till it (voice trails)

KD But ..

Reg I have been in two other projects where I have been the SME, I sit on the periphery and I watch it and in both cases, the two recent projects went round and round and disappeared off their exhaust pipes. In both these cases I have told Siva that this will never go anywhere.

KD Is this fact this did go somewhere because it came from a director? It was a directive, so to speak or No, is it because as you said earlier it is trying to stop something happening rather than being creative?

Reg It won't because, less people involved.

KD OK Why, why were there few people this time than usual?

Reg Because ….. it is almost we were trying to do the things through the back door. But, instead of turning it into a project, turned it into … we change the scope of how we described it. As to being … change requests and just configuration changes.

KD OK

Reg That required far less people involved and lot less higher structure being notified of what is going on. You keep it down more close to the coal face. At the coal face you could talk to each other and get something done.

KD Who owned the risk of going through the back door?

Reg (pause)

KD Who would have copped it if things were gone wrong?

Reg You couldn't go wrong. Because there were two things, it would either.. the policies would either work or don't work. If they didn't work it would take 30 secs to back them out.

KD Ok Ok

Reg So there was zero risk from that point of view. There was always the risk of something nasty could happen if we didn't do it. There was more risk of not doing it. But to undo what we did was a 30 sec job.

KD So again, radical in a sense, very simple and very quick and

Reg We are making policy changes in a central console, distribute them to all IHC and then you have the new protection. If anything goes wrong you change them back. Distributed ….(voice trails)

KD The director requested the change, is he happy with the outcome?

Reg I've not heard from him since… I'm assuming…

KD (laughs) so that's the way it works…If you don't hear from him you assume he is happy.

Reg Yeah.

KD Ok

Reg I've got another director, I am still putting pressure on at the moment, to try and get the change to get someone to fund the movement of the infrastructure to somewhere safe. Because with the growth of IHC, there are still more and more sophisticated business software coming in that do wonderful things. And the more sophisticated it gets the more risk we are going to get. The more … (we can only hope that this all goes to the network this BES software does clever things – speaks softly and fast). Now..the more we are opening up the holes in firewalls we are turning into Swiss cheese the risk becomes again. So we still need to continue to pressure to get the plan A happen. But at the moment, Plan B is sufficient.

KD Ok. That has been brilliant. You have covered, more than covered all the bases I had. Is there anything that from your side that I haven't covered that you think is relevant to this discussion?

Reg I don't know. I'm not sure what you are expecting of me.

KD Basically your interpretation of the experience, the IHC experience, the project experience and of the role Siva played in it.

Reg I always like to say about Siva is that, you don't work for him, you work with him. And that is probably the thing. You don't work for him, you work with him.

KD That has to do with the kind of relationship he has with you?

Reg No he does this to everyone.

KD Em

Reg I had stand ups with him. I had blazing rows with him. But we both respect that each one has different opinions, …later we shake hands and go for a coffee again.

KD The blazing rows have been about what? What sorts of things?…

Reg Always about policy things,

KD About work related issues,

Reg Oh Yeah

KD Never personality related issues

Reg "How the hell did you let it go through, there is no way we can do that." (very low emotive voice). This is me with a technical hat on. He will then go as to why from a political point of view,. There is no b***y way this is going to happen. And then we will discuss it.

KD So he has created an environment where people can be honest, confront each other with no consequences.

Reg Yes. We all speak our mind to each other in office. No one, I don't know of anyone who holds back. That's how we have our interactions done.

KD Well, that's what you have done with me today. Thank you, I appreciate that. Siva and I are the only ones who have access to this and Siva has two supervisors

Reg That's Eng?

KD Yes, you are comfortable with that?

Reg No, I have no problems with anything that helps Siva with his work.

KD Thank you.