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The entanglement of culture, leadership and performance in information systems development projects

by

Sharon Geeling

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Supervisor: Professor Irwin Brown

Co-Supervisor: Professor Peter Weimann

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PLAGIARISM DECLARATION

I, Sharon Lee Geeling, hereby declare that this thesis is my own original work and that it has been submitted to the Turnitin module. I confirm that the Turnitin report has been discussed with my supervisors and that there are no unresolved concerns emanating from this report.

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PUBLICATIONS

The research study yielded three conference papers. The first paper addressed a review of the information systems (IS) and culture literature. The objective for the review in respect of this research was twofold; firstly, to refresh understanding of how culture is used in IS research and secondly as an exercise to assess the suitability of the NVivo software tool for qualitative analysis for this research. A systematic, hermeneutic approach was adopted for the literature review to address concerns of remaining engaged with the text while maintaining systematicity through the review process (see section 2.2 of this thesis for details). The paper was presented at the Conf-IRM conference in Cape Town in May, 2016. The publication details of this paper are as follows:

> Geeling, S., Brown, I. & Weimann, P. 2016. Information systems and culture - a systematic hermeneutic literature review. *International Conference on Information Resources Management.* 18-20 May, 2016. Cape Town, South Africa.

The second conference paper was produced to present the argument for a dynamic, reflexive study of culture, leadership and performance in this research. The ontological, epistemological and theoretical foundations underpinning the research were presented. In particular, the Cultural Dynamics Model was positioned as an appropriate theoretical framework for data collection. The paper was presented at the IRWITPM conference in Dublin in December, 2016. The publication details of this paper are as follows:

> Geeling, S, Brown, I. & Weimann, P. 2016. Cultural dynamics: the interplay of culture, leadership and performance in information systems projects. *11th International Research Workshop on IT Project Management.* 10 December, 2016. Dublin, Ireland.

The third conference paper presented an explanatory theory of how culture is implicated in IS development. The objective for this work in respect of this research study was to deepen understanding of cultural influences in the domain of IS development. A subset of the culture and IS literature focused on IS development or the technology artifact formed the dataset for this interpretive study. An explanatory theory was produced from this work (see section 2.3 of this thesis for details) and presented at the International Conference on Information Systems (ICIS) in Seoul in December, 2017. The paper was awarded '*Best Track Paper – Global IS Issues*'. The publication details of this paper are as follows:

> Geeling, S., Brown, I. & Weimann, P. 2017. Processes of relating: cultural implications in information systems development. *Thirty Eighth International Conference on Information Systems.* 10-13 December, 2017. Seoul, South Korea.

Feedback from the ICIS conference was applied to a subsequent revision of the paper. The revised manuscript titled '*Cultures influence in information systems development processes*' has been submitted to the Information Systems Journal and is currently under review.

ABSTRACT

Information systems (IS) development represents a significant area of research interest in the IS discipline. Despite this interest, IS development projects consistently fall short in delivering anticipated outcomes within time, quality and cost constraints. Attempts by researchers to uncover contributors to high failure rates are complicated by fragmented views of the nature of the problem. These range from challenges to the validity of performance reports to contesting the conceptualization of success. Furthermore, there is a tendency in practice to address immediate symptomatic problems of IS project failure rather than resolve the fundamental issues. Consequently, recent measures indicate that 48% of IS projects fail to meet time commitments, 33% exceed their budget, 32% don't achieve their business objectives and 15% fail outright.

This PhD thesis presents research to explore and offer explanatory theory of how culture and leadership are implicated in the performance of IS development projects. Importantly, IS development is positioned as a form of social interaction. Thus, an understanding of the social context and the situated meanings that arise through social interaction are necessary conditions to effectively explore this research topic. Within this context the study reveals the performative nature of IS development work and offers explanations for the actions of organizational leaders and IS technical specialists involved in IS development.

An interpretive research paradigm and inductive reasoning were adopted for this research and understanding is developed through a hermeneutic mode of inquiry. Two IS projects responsible for delivering strategic benefit to an organization in the financial services sector are the two cases in this study. Qualitative data were collected through interviews, observation and documentary evidence between January 2017 and June 2017. The nature of the relationships between culture, leadership and performance in the course of IS development work was revealed through two analytical iterations. The first iteration used the theory of Cultural Implications in Information Systems Development as a structural framework to support a thematic analysis of the data. A second iteration used frame analysis as a theoretical foundation to examine the interplay of culture, leadership and performance through a within-case and cross-case analysis of the two cases.

Key contributions from this research include the development of a conceptual model explaining cultural implications in IS development, the development of an explanatory theory of the entangled nature of culture and leadership and the performance of IS projects, and 11 propositions that offer a basis for testing the emergent theory in future empirical studies. The findings from the research also reveal the performative nature of IS development work and identify concepts important to organizational managers and IS technical specialists. While the theory emerged in the context of IS development projects and the

concepts in the emergent theory are central to the practice of IS development, each could be equally relevant to other IS phenomena where culture, leadership and performance are implicated, such as IS management and offshoring. The grounding of theoretical concepts to empirical data enabled the application of the theory to practice; practical guidelines are offered in respect of the influences of culture and leadership on the performance of IS development projects. This research supports the suitability of the Cultural Dynamics Model as a sensitizing lens for data collection in interpretive studies where culture is implicated.

Keywords: IS development; IS development teams; IS projects; culture; leadership; IS project performance; frame analysis; Cultural Dynamics Model

Sharon Geeling

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LIST OF ABBREVIATIONS

BA	Business analyst
B-BBEE	Broad-Based Black Employment Equity
BEE	Black Economic Empowerment
CD	Company documentation
CDM	Cultural dynamics model (Hatch, 1993)
CHAOS	Research conducted by The Standish Group on project issues and reported in the CHAOS reports
CIISD	Cultural implications in information systems development (emergent theory)
Conf-IRM	International conference on information resources management
CV	Competing values
EE	Employment equity
FN	Field notes made by the researcher
ICIS	International conference on information systems
IRWITPM	International research workshop on IT project management
IS	Information systems
ISD	Information systems development
IT	Information technology
JE	Journal entries made by the researcher
MN	Notes taken by the researcher at meetings
NVivo	NVivo 11 for Windows. Version 11.4.1.1064 (64 bit). Edition: Pro
PD	Project documentation
PM	Project management
PMBOK	Project management body of knowledge
QSR	QSR International Pty Ltd
Qualtrics	Online survey software by Qualtrics
sd-as-p	Systems development as performing (emergent theory)
SDLC	System development life cycle
TA	Thematic analysis
UI	User interface

1 INTRODUCTION

1.1 Background to the Research Problem

Information systems (IS) development has held the interest of researchers since the mid-1970s and continues to be a key area of research interest today (Hirschheim & Klein, 2012). The mid-1970s to mid-1980s marked a shift in IS development from a highly technical process involving engineers and accountants, towards a stronger management orientation in IS operations. Included in this trend was management of the System Development Life Cycle (SDLC) through IS projects (Hirschheim & Klein, 2012). Although many studies have since focused on improvements to the SDLC (Hirschheim & Klein, 2012), IS projects continue to suffer high failure rates (Avison *et al.*, 2006; Bloch *et al.*, 2012; El Emam & Koru, 2008; Hastie & Wojewoda, 2015). Assessments of the performance of IS projects is fragmented in the academic literature by debates that range from skepticism regarding the validity of performance reports, to multiple views on how success should be defined and could be improved (Mpazanje *et al.*, 2013). For instance, project management (PM) scholars challenge the definition of project success (Rahschulte & Milhauser, 2010) and the factors critical for successful project outcomes (Cooke-Davis, 2002; Fortune & White, 2006; Papke-Shields *et al.*, 2010; Plant & Willcocks, 2007). Others question IS project failure rates. Failures reported in the CHAOS reports (Johnson & Mulder, 2016) are contested on the basis that cancelled IS projects are included in the count of failures, and these projects could be cancelled for reasons like changing market conditions rather than poor performance. In practice, efforts to search for the underlying causes of project issues generally fall victim to a pervasive dynamic in management interventions (Senge *et al.*, 1994) where solutions meant to rectify poor project performance tend to address immediate symptomatic problems instead. Consequently, solutions divert attention from the fundamental issue and ultimately fail to resolve it. While a recent report shows organizations improving their project success rates across industry sectors for the first time since 2011, approximately 48% of IS projects fail to meet time commitments, 33% exceed their budget, 32% don't achieve their business objectives and 15% fail outright (Project Management Institute, 2017a). Clearly, further efforts to shed light on the reasons behind the poor performance of IS projects remain relevant.

There are multiple perspectives from which the study of project performance is approached. For instance, some researchers in the PM domain look to improve the probability of project success by matching management structure, style and practices with the type or category of project (Crawford & Pollack, 2007; Sauser *et al.*, 2009) or by highlighting the relative importance of different PM tools and techniques (Besner & Hobbs, 2006). Others attribute the poor state of project success rates to a perceived lack of relevance of PM research to PM practice and consequently seek to broaden the conceptual base of the PM field (Ingason & Shepherd, 2014; Winter *et al.*, 2006). These researchers in particular, call for PM research to reflect the sociological nature of projects, evidenced in the importance of concepts in PM practice like interpersonal skills, communication, leadership and teamwork, and the context sensitivity,

complexity and uncertainty that characterizes project work (Hanisch & Wald, 2011; Ingason & Shepherd, 2014; Winter *et al.*, 2006).

A sociological perspective on projects could explore the underlying causes of IS project failures by using concepts popular in organizational studies. The premise of the applicability of organizational concepts to the study of projects is supported by research that likens projects to temporary organizations (Turner & Müller, 2003). Additionally, IS projects exist within an organizational context (Project Management Institute, 2017b) supporting the notion of the organization as a core component of IS research (Lee, 2010). In organizational studies the concept of culture has particular relevance when seeking underlying causes for organizational issues; organizational culture has been shown to generate forces in organizational situations that exert greater influence over organizational members than formal control structures and policies (O'Reilly *et al.*, 1991). Furthermore, a cultural perspective on a problem can alert to taken-for-granted aspects of social life and offers useful ways of examining human behavior in complex systems (Schein, 2011).

There is enormous variation in the definition and use of the concept of culture (Alvesson, 2011). Even in anthropology where culture has its roots, there is no fixed or broadly agreed meaning (Alvesson, 2011). Organizational and IS studies share a common conceptualization of culture as the shared norms, symbols, practices, beliefs and values of a group that determines how they will perceive and react to their environment (Pettigrew, 1979; Hofstede, 1980; Schein, 1985). Culture is also defined as the shared understanding of social reality, created during social interaction through the negotiation of meaning and the use of symbolism (Alvesson, 2011). The negotiated meaning that emerges is only moderately stable and only partially verbalized, and involves the deciphering of elements like assumptions, beliefs and values. From this perspective, culture does not represent the totality of a way of life. Rather, it represents a system of common symbols and meanings that provide the shared rules that govern group interaction and group outcomes (Alvesson, 2011).

The assumption that organizational culture contributes to performance improvements has generated much of the interest in the concept amongst organizational and IS scholars (Ogbonna & Harris, 2000). However, the relationship between culture and improved performance is often not established and can be influenced by contextual circumstances (Gregory *et al.*, 2009; Sørensen, 2002; Wilderom *et al.*, 2012). For instance, in volatile environments cultural values that are intensely supported and widely shared among organization members can prove detrimental; cultural assumptions underlying the values become rapidly outdated in these situations and the intense and widespread support of the culture raises resistance to organizational efforts to adapt (Sørensen, 2002). Additionally, the assessment of performance is also subject to individual and group judgements that are culturally influenced (Alvesson, 2013). In this sense, performance assessments themselves can be considered a cultural manifestation, as they represent a public expression of what is considered to be of value to the group (Alvesson, 2011).

There is much discussion in the theoretical literature on the relationship between culture and leadership (Schneider *et al.*, 2013). It has been argued that the values and beliefs held by founding members of a group are used initially as the basis for making group decisions (Schein, 2010). If the resulting group actions are successful, those values and beliefs constitute the initial culture of the group (Bass & Avolio, 1993; Pettigrew, 1979; Schein, 2010). Thereafter, the culture of the group and the actions of its leaders become inextricably intertwined, and an ongoing interplay develops between the two concepts over the life cycle of the group (Bass & Avolio, 1993; Schein, 2010). Cultural norms arise and change, depending on what leaders regularly monitor and control and the behaviors the leader models, particularly during times of crisis (Alvesson, 2011; Bass & Avolio, 1993; Mumford *et al.*, 2002; Schein, 2010). In this sense leadership can be conceptualized as a cultural act, occurring in a cultural context, and interpreted through culturally guided cues that exist in social processes (Alvesson, 2013). The actions of leaders shape the beliefs and understanding of their followers through the meaning that followers attribute to leadership activity. At the same time, the culture of the group begins to exert an influence over its leaders, shaping their actions and leadership styles (Bass & Avolio, 1993; Schein, 2010).

Leaders have been shown to reinforce certain norms and behaviors within a culture to improve the effectiveness of a group (Klein *et al.*, 2013; Nam Nguyen & Mohamed, 2011). Particular styles of leadership can contribute to fostering cultures conducive to achieving group objectives (Klein *et al.*, 2013). In a study examining objective and perceived measures of organizational performance, a charismatic leadership style was shown to affect both measures (Wilderom *et al.*, 2012). Similarly, an earlier study showed that leadership fostering a culture of participative decision making, power sharing, support and collaboration, and tolerance for risk and conflicts contributed to the successful implementation of an enterprise resource planning solution (Ke & Wei, 2008).

The complexity of the relationships discussed in this section, between culture and leadership, leadership and performance, and culture and performance corroborates a need for more research paying simultaneous attention to all three concepts.

1.2 Purpose of the Research

The purpose of this research study is to improve understanding of the nature of the relationships between culture and leadership, culture and performance and leadership and performance during IS development. Consequently, the research addresses the following primary research question:

> *How are culture, leadership and performance implicated in information systems development projects?*

An improved understanding of these dynamics will allow attention to be focused on underlying factors influencing IS development, enable the uncovering of a more fundamental understanding of the enduring problem of poor project performance, and provide insight on the complex environments that result from the cultural heterogeneity that characterizes contemporary organizations and IS development projects.

1.3 Research Objectives

The objectives of this research study are as follows:

- To identify characteristics of the national and organizational cultures relevant to the research question;
- To explain how organizational culture influences leaders in IS development projects;
- To explain how organizational culture influences the performance of IS development projects;
- To explain how leaders influence the performance of IS development projects;
- To explain how leaders influence the culture of the organization.

1.4 Importance of the Research

A report commissioned by the Project Management Institute estimates an increase of 11.6 million new project management roles between 2017 and 2027 across 11 countries on 5 continents, equating to an economic footprint for the profession of USD$20.2 trillion by 2027 (Anderson Economic Group, 2017). This growth is driven by an increasing use of projects as a vehicle for the delivery of products and services across economic sectors, and an increasing demand for project talent from rapidly developing economies (Anderson Economic Group, 2017). While a recent report shows organizations improving their project success rates for the first time in 5 years, an estimated US$97 million for every US$ 1 billion invested in projects is still wasted by organizations through poor project performance (Project Management Institute, 2017a).

This research will provide a better understanding of the performance of IS projects and through this investigation address inadequacies in the extant literature covering IS and culture research; culture is predominantly conceptualized as a set of values (Leidner & Kayworth, 2006), it tends to be treated as homogeneous and static (Gallivan & Srite, 2005; Leidner & Kayworth, 2006), the complexity of culture at multiple levels is generally not acknowledged (Signorini *et al.*, 2009) and there is a lack of research paying simultaneous attention to culture, leadership and performance (Ogbonna & Harris, 2000).

Four types of contributions are expected. Firstly, rich insight is expected on the influence of organizational culture on IS development projects, contributing to closing the gap in the literature caused by most IS studies treating organizational culture as homogeneous (Leidner & Kayworth, 2006). Secondly, concepts will be developed and theory generated to improve understanding of the influence of organizational culture on leaders and how leaders in turn influence the performance of IS development projects. This further addresses a need for additional studies that consider the relationships between organizational culture, leadership and performance (Ogbonna & Harris, 2000). Thirdly, the research will allow specific implications to be drawn regarding the influence of organizational culture on project outcomes, contributing to the call to broaden the conceptual base of the PM field to address poor project performance (Hanisch & Wald, 2011; Ingason & Shepherd, 2014). Finally, the research will make an overall contribution to growing the relatively small body of IS research focused on the relationship between culture and IS development (Ford *et al.*, 2003; Leidner & Kayworth, 2006).

From a systems thinking perspective, it is suggested that the enduring problem of poor project performance is a manifestation of a '*Shifting the Burden*' systems archetype. This archetype represents a pervasive dynamic in management interventions, where solutions address immediate symptomatic problems, but fail to resolve, and divert attention from, the fundamental issue (Senge *et al.*, 1994). Consequently, the contention is that an improved understanding of cultural dynamics will focus the attention of organizational leaders on more fundamental issues contributing to the poor performance of IS development projects and enable sustainable and more successful interventions. For instance, project managers could reflect on the composition of multicultural project teams and introduce interventions to mediate potential problems. Organizational leaders could use their insight to guide how projects are situated and managed in organizations. Furthermore, organizational leaders could support programs that cater to the growth of cultural understanding when planning the future development of IS personnel.

1.5 Research Context

This research has been conducted amongst IS development stakeholders from two projects in an organization operating in the financial services industry in South Africa. The organization is relatively large and old, and as such is representative of an organization with a strong organizational culture. Organizational life-stage and size are both antecedent contextual factors in the development of organizational culture (Gelfand *et al.*, 2006). Both projects are in the execution phase of the project lifecycle; teams of project stakeholders are working together to produce and implement project deliverables. The two projects in the organization have been positioned on the basis of their performance; one project is experiencing challenges in achieving performance targets, while the other shows a healthier performance trend, in relative terms. While the projects seek to implement different organizational objectives, they are both classed as strategic projects within the organization and both have technology as a central delivery component. Thus the specialist skills in the project teams are similar, and the complexities associated with IS development, while experienced in varying degrees, remain relevant for each project team. Additionally, the strategic nature of each project places similar organizational expectations and dependencies on successful project outcomes. The context provides the opportunity for an in depth study to explore and contrast the cultural dynamics as project stakeholders go about their project business.

1.6 Definition of Terms

Some of the terms fundamental to this thesis may be defined differently in different contexts. This section contains the description of how these terms have been conceptualized and used in this thesis.

- ***Information systems development*** is conceptualized as any of the steps followed in the system development life cycle, or any of the processes involved in the development of an IS (Hirschheim & Klein, 2012).
- A ***project*** is defined as "*…a temporary endeavor undertaken to create a unique product, service, or result*." (Project Management Institute, 2017b:4). The temporary nature of the project implies that it has a definite beginning and end. The uniqueness of the product, service or result implies that the project contains unique characteristics, despite the potential of some repetitive elements (Project Management Institute, 2017b).
- ***Organization*** is conceptualized as a collective where members organize through "*…symbolic modes such as language that facilitate shared meanings and shared realities.*" (Smircich, 1983:342).
- ***Project stakeholders*** are defined as *"…the people, groups or organizations that could impact or be impacted by the project…"* (Project Management Institute, 2017b:503).
- ***Organizational culture*** is conceptualized as the assumptions, values, artifacts and symbols that have an influence or manifest in the pursuit of organizational objectives (Hatch, 1993; Schein, 2010). The views of both organizational managers and non-managerial members are included (Alvesson & Berg, 1992). Furthermore, ***organizational culture*** is viewed as heterogeneous, dynamic and emergent (Ravishankar, 2015; Suri & Abbott, 2013)
- ***Assumptions*** are the taken-for-granted beliefs about the nature of reality, human activity and human relationships (Hatch, 1993; Schein, 1985).
- ***Beliefs*** are priorities that have been deeply internalized (Alvesson & Berg, 1992), creating general expectations that influence perceptions, thoughts, and feelings and create a heightened awareness of particular aspects of life (Hatch, 1993).
- ***Values*** are the philosophies, goals and standards considered worthy by individuals and groups (Hatch, 1993; Schein, 1985). ***Values*** may be characterized as a) espoused; written or spoken words or phrases, b) aspirational; the values entities ought to have, what should be, c) shared; the aggregated values shared by a group and d) attributed; generally regarded by others as representative of an entity (Bourne & Jenkins, 2013). Examples include accountability, integrity, respect, courage, care and good service provision.
- ***Artifacts*** are the results of activity or the activity itself (Alvesson & Berg, 1992; Schein, 1985). At the organizational level examples include organizational structure, facilities, office furnishings, websites, social media references, magazines, newsletters, technology, processes, meetings, and workshops (Jones, 1996) Examples at the project level include the project structure, project facilities & office

furnishings, project communiques, technology, processes, meetings, workshops, project manager, project sponsor or other project team members (Jones, 1996).

- ***Symbols*** are artifacts that have acquired meaning beyond their literal form (Hatch, 1993; Schein, 1985). ***Symbols*** are seen to be apparent and observable, and are considered to be contributors to the creation of order and clarity in complex situations (Alvesson & Berg, 1992). Examples include objects, actions, events, utterances, concepts or images (Jones, 1996).
- ***Leadership*** is conceptualized as the symbolic actions of leaders that affect the beliefs and understanding of their followers (Alvesson, 2013). The effect of leadership actions is seen to be determined by the meaning that followers attribute to leadership activity. ***Leadership*** is thus a cultural act, occurring in a cultural context, and interpreted through culturally guided cues that exist in the social processes (Alvesson, 2013).
- ***Performance*** is conceptualized from both an input and an outcome perspective (Küpers, 2017). An input view of performance focuses on the performing of events and defines ***performance*** "*as something to do, or go through; as a way to develop a set of skills; as a methodology, ...; as a way of knowing; and as a way of being*." (Denzin, 2003:28). From an outcomes perspective ***performance*** is defined as effectiveness, the achievement of organizational goals or objectives (Denison & Mishra, 1995; Klein *et al.*, 2013; Quinn & McGrath, 1985; Schneider *et al.*, 2013) or efficiency, referring to maximizing the output of resources (Belout, 1998). The evaluation of ***performance*** serves as a measure of project success and is subject to individual and group judgements that are culturally influenced (Alvesson, 2013). In this sense, assessments of ***performance*** or judgements regarding the success of a project are considered to be cultural manifestations (Alvesson, 2013).

1.7 Organization of the Thesis

This thesis is structured as a monograph of seven chapters. Chapter 1 provides the background and context of the area of interest and describes the nature of the research problem. The aim and objectives of the research, the research question, the context in which the research is conducted, and a definition of the terms used in this thesis are also covered in this chapter.

Chapter 2 covers a review of the literature pertinent to the study of culture in information systems and other related disciplines, and the literature related to leadership and performance. In particular, the literature examining the relationships between culture, leadership and performance is reviewed and the principal issues related to these concepts are consolidated. This chapter serves to answer the question: *What has the research in this field revealed, what are the gaps and what problems associated with previous studies have been revealed*? The chapter concludes with the details of the research questions to be addressed in this study.

Chapter 3 describes the role of theory in this research study. The theoretical framework that serves as a sensitizing device to guide the data collection is described and the argument for the relevance of the

framework to the research question is presented. Subsequent theory used during analysis of the data and the building of new theory is also presented and the relevance of this theory is discussed.

Chapter 4 describes the research methodology, including underlying ontological and epistemological assumptions. Research methods, the approach to data collection and relevant data analysis techniques are discussed. The approach used in this research study is also described and argued in this chapter.

Chapter 5 presents the research results and an analysis and interpretation of the collected data.

In Chapter 6, a theory derived from the empirical data is discussed and generalized through derived propositions and theoretical elaboration.

The thesis is concluded in Chapter 7 with a discussion of the contribution of this thesis to theory, methodology and practice, and suggestions for further research. This final chapter is followed by a full list of references for the thesis and a series of attachments covering research instruments, data extracts and summaries and administrative documents.

2 LITERATURE REVIEW

This chapter describes how existing research has been identified and analyzed to provide a theoretical basis to this research study. The review of the literature was approached as a series of 3 'research phases'. Approaching the literature review as a qualitative study with the literature representing the data set is accepted practice in IS research (Bandara *et al.*, 2015; Tate *et al.*, 2015). The data gathering and data analyses of the literature in each phase followed a process contingent on the goal of the literature review while considering issues of acceptable process and validity (Tate *et al.*, 2015). Each phase of the literature review is described in a separate section that includes the approach and methods used to select and analyze the literature and the findings relevant to the research topic. These sections are followed by conclusions drawn from the review of the literature, and the research questions that emerge as a result.

2.1 Reviewing the Literature – First Phase

2.1.1 Goal and Method

The goal of this phase of the literature review was to establish what is currently known about the key concepts in the research topic namely information systems (IS) development, culture, leadership and performance and the relationships between these concepts. An analysis and synthesis of the literature to reveal the depth of knowledge of key concepts is a legitimate outcome from a literature review (Watson, 2015). As synthesis of IS literature is complicated by its interdisciplinary nature and by the diversity, contradictions and discontinuity in the subject matter (Bandara *et al.*, 2015; Tate *et al.*, 2015), the goal for this phase was to produce a narrative review. A narrative review allows for flexibility in the identification and selection of articles (Paré *et al.*, 2015), allowing for only a relatively low level of reproducibility of the review but importantly offering the possibility of an easier summarizing of studies (Houy *et al.*, 2015). Furthermore, reproducibility is less important for non-theory testing reviews such as was the case for this phase (Rowe, 2014). Additionally, a hermeneutic approach to the review was followed to develop understanding of the concepts in the research study (Boell & Cecez-Kecmanovic, 2014). A hermeneutic review allows understanding to unfold and develop iteratively through successive hermeneutic cycles (see Figure 1); analysis of the literature, identification of new literature and engagement with each new text (Boell & Cecez-Kecmanovic, 2014).

Figure 1. The hermeneutic literature review process (Adapted from Boell & Cecez-Kecmanovic, 2014)

The interdisciplinary nature of the phenomenon in this research study required a search of a wide range of sources (Rowe, 2014). Thus journals, books and conference proceedings were included as sources for the selection of literature (see attachment 9.5). While reviews typically cover a period of 10 years (Rowe, 2014), seminal work dating back to the early 1980s were also identified and included. The search for relevant literature began by looking for existing literature reviews as a means to establish an overview of the state of the existing research and to identify the leading researchers and leading journals in the field; Kappos and Rivard (2008), Leidner and Kayworth (2006), Lawrence (2013), Steers *et al*. (2012), Schneider *et al*. (2013) and Zhang and Lowry (2008). A process of backward and forward searches of the references cited in these reviews was followed. The abstracts of the articles identified were scrutinized to find papers relevant to this research study. The Web of Science database was also searched for additional articles, using several search criteria such as:

> *(organi?ational culture AND leadership) OR (organi?ational culture AND performance) OR (organi?ational culture AND leadership AND performance) OR (leadership AND performance)*

and

> *(organi?ational cultur* AND ("information system*" OR technolog*)) OR (perform* AND ("information system*" OR technolog*)) OR (lead* AND ("information system*" OR technolog*))*

The use of keywords to search for literature is an acceptable approach for identifying relevant research (Wolfswinkel *et al.*, 2013). These search terms were used to search the title, abstract and keywords of journal articles and conference proceedings. The same process of backward and forward searches continued through the reference list of each new article. As expected, the phases of the literature review were iterative (Bandara *et al.*, 2015; Boell & Cecez-Kecmanovic, 2014); the identification and analysis of literature and subsequent inclusion in the review followed multiple iterations. The body of literature gradually develops through continuous engagement and increased insight and understanding (Boell & Cecez-Kecmanovic, 2014). Completion of the hermeneutic process was decided on the basis of time constraints and no new concepts being uncovered, an acceptable basis on which to complete a review of the literature (Webster & Watson, 2002).

2.1.2 Results

The results from this first phase of the literature review are organized as follows. First, IS development is positioned as central to the IS discipline, and IS development methodologies and the management of development efforts is discussed. Next, the concept of culture is explored, covering definitions of culture and a critique of culture research in the organizational domain. A review of culture in the IS domain is the focus of the second phase of the literature review and is discussed in section 2.2. A review of leadership in organizations, as well as leadership within an IS and project context follows and this section is concluded with a review of the concept of performance and the relationship between performance and culture.

2.1.2.1 IS development

Within the IS field, IS development continues to be an important area of research with the vast majority of studies focusing on processes directly contributing to the production of the IS artifact (Hassan & Mathiassen, 2018). Despite the importance of IS development to the IS discipline, researchers in this domain do not escape an ongoing debate in the field over legitimate methods, relevant objects of study and what constitutes a significant problem (Hassan & Mathiassen, 2018). Benbasat and Zmud (2003:186) address the concern for IS development by positioning "*The managerial, methodological, and technological capabilities as well as the managerial, methodological, and operational practices involved in planning, designing, constructing, and implementing IT artifacts*" as components of the core properties of the IS discipline. The development of an IS is positioned as central to the discipline, and thus a relevant topic for consideration by IS researchers.

Definitions of IS development can contribute to the segregation of the domain as a unique area of study and assist in identifying its core concepts (Hassan & Mathiassen, 2018). Consequently, definitions that incorporate performance orientated towards the production of a technical artifact and processes orientated towards the management of technological and organizational change contribute to this need, while others that fail to emphasize the social aspects of IS development and consider it to be synonymous with development methods fall short (Hassan & Mathiassen, 2018). A definition of IS development claiming to satisfy these requirements has been put forward by Hassan and Mathiassen (2018:178):

> *"The integrated social and technical practices of conceptualizing and realizing information technology-based systems, and managing the associated changes and implications to accomplish specific goals in organizational contexts."*

According to this definition, IS development consists of multiple dimensions related to both the technical and social knowledge systems necessary to develop systems and to deal with subsequent implications, like assessments of success / failure, adoption and use (Hassan & Mathiassen, 2018). As a contribution to settling the debate regarding the core concerns and standards of the IS domain, Hassen and Mathiassen (2018) have proposed a set of dimensions and knowledge areas that could be considered to represent the key concepts for IS development. These are illustrated in Table 1.

Dimension	Description	Knowledge Area	Elaboration
ISD Framework	– Drives the interpretation and actions of the ISD Management processes and the ISD Performance processes. – Contains principles of the generation and structuring of practices – Representations operate at different levels of abstraction.	**P**aradigm	Assumptions about knowledge and about the physical and social world.
		Approach	Goals, principles and fundamental concepts that drive action.
		Methodology	Concepts and methods. Incorporates beliefs, values and normative principles.
		Techniques	Well-defined sequences of elementary operations which permits the achievement of certain outcomes.
		Tools	Either designed with specific methodologies in mind, or admit any methodological

Dimension	Description	Knowledge Area	Elaboration
			principles.
ISD Management	– The process of enabling the – coordination, organization, and practice of ISD amongst participating actors.	**P**roject Organizing	Concepts generic to project management like 'project management', 'project scope', 'project costs', 'project communication' and 'project schedule'.
		Method Management	Management of IS development methods.
		People Management	Focus on interpersonal conflict, closer involvement of users in the development process and managing relationships.
		Stakeholder Management	Managing those with a vested interest in the ISD project or external organizations needed to implement the system.
		Supplier Management	Controlling outsourced projects and management of external consultants and vendors who act as suppliers.
		Quality Assurance	Assuring the quality of the product of IS development.
		Performance Management	Measurement, evaluation and handling of project progress. Project escalation, de-escalation and performance measurement
		Risk Management	Focus on software project risks and portfolio based management of software risks.
ISD Performance	– Process that directly contributes to the production of IS artifacts (product-oriented).	**O**rganizational Alignment **A**rchitecture	The fit of the artifact with organizational and social context of its use. Includes planning and design, specifically architectural issues.
		Requirements Construction	Assumes a close relationship between the IS and the social context, emphasizes application knowledge and business rules. Cognizant of communication gaps between developers and users and different ways new technology is framed.
		Conceptual and Data Modelling **S**oftware and Systems Design **P**rocess Design	Design-science sub-knowledge area. Includes cognitive psychology theories (supporting interface design and usability) and organizational theories (supporting organizational politics, conflict, power, task / technology fit).
		Implementation	Intricate connections to the social domain of users and customers (includes communication, change management, organizational culture, politics etc.).
		Testing	Length of testing periods and timing of software releases.
		Training	Informed by social cognitive theory and various forms of learning theories.
		Use	Re-conceptualizing usage, changes of behavior and attitudes during use, adaptation in use and appropriation of technology.
		Evaluation	User perceptions of system quality after delivery of the system.

Dimension	Description	Knowledge Area	Elaboration
		Acceptance	Whether or not the system is found to be useful.
		Maintenance and Evolution	

Table 1. Dimensions and knowledge areas of IS development (Hassan & Mathiassen, 2018)

In addition to these core concepts for IS development, the IS development environment can be taken to include:

- the characteristics of the individuals involved,
- the organizational and societal context in which they operate,
- and existing IS(s) with which the IT artifact is required to integrate or which are impacted by the development efforts (Ives *et al.*, 1980; Benbasat & Zmud, 2003; Watson, 2014).

An IS supports the attainment of organizational goals at multiple levels (Watson, 2014). As such, the practice of developing the IS requires cooperation and collaboration from multiple stakeholders (Watson, 2014). For instance, empirical studies have shown that the active participation of customers in the development process ensures more of their requirements will be included into the final project (Ashmore & Wedlake, 2016). Furthermore, the transformational capability of an IS has implications in organizational settings (Watson, 2014). An IS has the capability to transform relationships between the organization and its suppliers, between functional units in the organization and between individuals and their relationship with technology. Thus, the social implications underpinning the development of an IS introduce complexity and uncertainty (Watson, 2014) and the need for management of the development process. A stronger management orientation in IS operations emerged during the mid-1970s to mid-1980s including increased attention to management of the IS development effort (Hirschheim & Klein, 2012). Organizations began involving users in IS projects, initially to determine requirements, but later to also manage delivery of the IS (Hirschheim & Klein, 2012). Management of IS development efforts became more formalized to the point where the IS industry became a dominant area of interest in project management (PM) research efforts, with indications since the 1990s of an increase in interest (Kloppenborg & Opfer, 2002). In the IS field, research studies concerned with the management of IS development focus on processes that enable the coordination, organization and practice of the IS development effort (Hassan & Mathiassen, 2018).

A focus in the mid-1970s on the technical dimensions of the systems development life cycle (SDLC) produced the '*waterfall model*' of systems development processes (Hirschheim & Klein, 2012). Essentially, this model follows an approach that requires fully detailed software specifications before the software development process can start (Korpela *et al.*, 2002). This model still persists today despite an inherent lack of flexibility and long cycle times (Royce, 1987). In contrast to the waterfall model, recent additions to IS development methodologies like agile methods are more concerned with the social nature of IS development than with a need to attend to technical considerations. For instance, the values contained in

the Agile manifesto (Beck *et al.*, 2001) include "*Individuals and interactions over processes and tools"* and *"Customer collaboration over contract negotiation",* each emphasizing the preeminence of social interaction in software development. Research studies of IS development using agile methods have since shown the importance of collaboration between customers and product development teams (Ashmore & Wedlake, 2016) and how communication difficulties (Tanner, 2009) and interpersonal conflict (Estler *et al.*, 2014) can impact the performance of these teams. The superiority of an agile rather than a waterfall software development approach has not always emerged in empirical studies. For instance, while improvements in IS performance and product quality from development teams following an agile approach have been established (Tarhan & Yilmaz, 2014; Azanha *et al.*, 2017), other studies were unable to show significant differences between projects following an agile approach and those that did not (Estler *et al.*, 2014). These findings suggest more nuanced research covering the software development process is called for.

2.1.2.2 Culture

2.1.2.2.1 The Concept of Culture

Definitions of culture are plentiful in the academic literature, representing a wide variety of contradictory views on exactly what culture means (Straub *et al.*, 2002). Even in anthropology where culture has its roots, there is no fixed or broadly agreed meaning (Alvesson, 2011). A categorization of the multitude of definitions found three broad groupings; 1) definitions based on the idea of shared values, 2) definitions of culture as a problem solving device and 3) definitions of culture as a "*way of being*" (Straub *et al.*, 2002:18). The most popular of these is the idea of culture as a set of value patterns that are shared by the members of a collective (Straub *et al.*, 2002). One of the most influential frameworks in this category is Hofstede's (1980) national culture dimensions. Hofstede defined dimensions of national value differences to allow comparisons of organizational culture to be drawn across national boundaries. Values research has since indicated both commonality of values and variation in the relative importance of values across nationalities, supporting the view that measuring values can give insight into cultural differences (Fellows & Liu, 2013). Despite the appeal and reported successes of a values-based approach to culture research, there is growing unease regarding the explanatory power of values to uncover cultural differences (Gelfand *et al.*, 2006). For instance, in cultural studies based on national values such as Hofstede's (1980), researchers tend to attribute cultural values to subjects on the basis of group affiliation rather than explicitly measuring the cultural values of each subject (Gallivan & Srite, 2005). This fosters a view of culture as consistently understood, espoused and acted on by all group members (Leidner & Kayworth, 2006) and results in an impoverished understanding of cultural differences that may exist, both within groups, and between groups (Gallivan & Srite, 2005). Values can also adopt different forms and this isn't always made explicit in empirical studies. As an example, organizational values can range from those that are espoused by senior management, those that are shared by many in the organization and others that organizational members

only aspire to (Bourne & Jenkins, 2013). Finally, scholars have not reached agreement on the number of values to include in empirical studies to adequately depict a culture (Fellows & Liu, 2013).

Scholars aligned to the view of culture as a problem solving device look at how culture contributes to the adaptation of collectives to changing circumstances (Straub *et al.*, 2002). For instance, Denison and Mishra (1995) viewed culture as an adaptive mechanism, helping organizations cope with changes to the external environment. Their cultural dimensions of involvement, consistency, adaptability, and mission, consequently relate to responses aimed at addressing organizational effectiveness. Similarly, Schein (2010) defines organizational culture as the shared, taken-for-granted assumptions held by employees that determine how they will perceive and react to their environment. The values and beliefs of founding members that have proved successful become the basic underlying assumptions that the group uses in future efforts to adapt to the demands of the external environment and to handle internal integration issues (Schein, 2010). This view of culture has, however, produced mixed results. Empirical studies seeking to understand the contribution of culture to problems like organizational ineffectiveness or poor performance often fail to establish a relationship (Gregory *et al.*, 2009; Sørensen, 2002; Wilderom *et al.*, 2012). The relationship is complicated by extraneous factors. For instance, the perceived benefits of a strong culture, defined as a set of values that are intensely supported and widely shared across the organization (O'Reilly III, 1989), can be reduced in volatile environments when the underlying cultural assumptions become rapidly outdated and the intense and widespread support of the culture raises resistance to organizational efforts to adapt (Sørensen, 2002). Conversely, studies of IS development teams have found culture implicated in project performance. Differences in national cultural values have been found to impact the creation and maintenance of productive teams (Martinsons *et al.*, 2009), while cultural differences in work practices among members of multicultural teams can cause cost overruns and client dissatisfaction (Rai *et al.*, 2009).

Similar to the perspective of culture as a problem solving device is the view taken by scholars who position culture as primarily instrumental in shaping or constraining action (Alvesson, 2011; Goodenough, 1994; Swidler, 1986). Here, scholars are interested in how culture is used by individuals and groups, how culture constrains action and how culture action patterns endure or become undermined (Swidler, 1986). Swidler (1986) introduces the notion of culture as a '*tool kit*' of stories, rituals, frames of reference and practices from which people build cultural repertoires that guide their action. In practice, the cultural repertoire represents the mix of cultural resources purposely constructed to solve everyday problems (Swidler, 1986). This perspective suggests the possibility of different outcomes or courses of action from different individuals or groups, despite a shared culture (Giorgi *et al.*, 2015). Furthermore, the translation of cultural beliefs and values into practice relies on the skills and experience of individuals, without which culture is of little consequence (Swidler, 1986). In addition, individuals with broader societal or

occupational experience may have a wider range of cultural tools, and will consequently be able to envisage a broader range of possibilities for solving problems (Swidler, 1986).

Another perspective aligned with the view of culture as a tool kit is a positioning of culture as a framework of meaning. Here, culture is considered to be a point of reference that allows shared understanding to develop in groups and highlights misunderstandings (Batteau, 2000; Goodenough, 1994). Misunderstandings arise in social interactions as a consequence of different stakeholders, both individuals and groups, holding different values, beliefs, norms and practices that emanate from cultural differences (Avison & Banks, 2008; Dysart-Gale *et al.*, 2011; Gregory *et al.*, 2009; Iivari & Huisman, 2007; Leonardi, 2011; Levina & Vaast, 2008; Martinsons *et al.*, 2009; Suri & Abbott, 2013). Misunderstandings also arise through a mismatch of the values embedded in societal or organizational cultures and the values embedded in technology (Barendregt, 2008; Barzilai-Nahon & Barzilai, 2005; Boersma & Kingma, 2005; Kaplan, 2011; Koch *et al.*, 2013; Sia *et al.*, 2009; Waring & Skoumpopoulou, 2012). When confronted with contradictory views, individuals and groups try to make sense of the situation through developing a shared understanding of new possibilities and feasible solutions. Culture becomes involved in the sensemaking process by providing individuals with '*cultural resources*' to deal with the situation. As an example, Leonardi (2011) showed how individuals drew on cultural resources when specifying requirements for software development. Individuals and groups often seek to align cultural values in their effects to reach a shared understanding. For instance, modifications to an IS system were allowed in an effort to better support user values (Koch *et al.*, 2013), while organizational policy (Koch *et al.*, 2013; Rai *et al.*, 2009) and organizational practices (Levina & Vaast, 2008; Suri & Abbott, 2013) were adjusted to better align the cultural values of different actors in offshore application development projects.

Finally, scholars who consider culture to be a '*way of being*' are of the view that members of social groups make sense of the various manifestations of group functioning by deciphering the patterns of meaning that link the manifestations (Martin, 2002; Pettigrew, 1979). Included in these patterns of meaning are the beliefs, ceremonies, language, stories and other common rituals that occur in everyday life. Using cues in the social environment to guide their behavior, group members reflexively monitor the actions and outcomes of their daily interaction with others and build an understanding of how social interaction should work. The shared orientation among group members to the meaning in social interactions is what constitutes culture (Alvesson, 2011; Martin, 2002; Pettigrew, 1979).

2.1.2.2.2 Levels of Culture

A concept like culture has properties that can be conceptualized at multiple levels of analysis (Schneider *et al.*, 2013; Yammarino & Dansereau, 2011). For instance, IS researchers have examined culture at the individual level (Gregory *et al.*, 2009), at the group level (Leonardi, 2011; Suri & Abbott, 2013) at the organizational level (Koch *et al.*, 2013; Pan *et al.*, 2008) and, most commonly (see Figure 7, section 2.2.2) at national level (Clemmensen, 2012; Cyr & Head, 2013; Lowry *et al.*, 2010; Pscheidt, 2011). Furthermore, an

IS has a culture of its own, embedded in the structure and system operating procedures and manifested in its rules, data and technical requirements (Waring & Skoumpopoulou, 2012). This section discusses different levels of culture commonly defined in the academic literature and pertinent to research in organizational settings.

a) National Culture

In organizational settings the concept of national culture is of theoretical interest primarily with regard to the extent it influences the shaping of organizational culture (Schneider *et al.*, 2013). For instance, Hofstede's (1980) national culture dimensions commonly serve in empirical research to allow comparisons of organizations across national boundaries (Chae *et al.*, 2011; Chang *et al.*, 2015; Im *et al.*, 2011; Udo *et al.*, 2012; Venkatesh & Zhang, 2010). However, while the national culture has an influential impact on organizational culture, it does not have a deterministic impact (Schneider *et al.*, 2013). Organizational cultures are thus not subject to the national culture within which they are situated (Patel, 2015). Rather, organizations should be viewed as a collection of multiple cultures at many levels, each of which influences the others in dynamic ways (Patel, 2015). More contemporary theories conceptualize culture as a '*milieu*' of the expectations and understanding of group members that helps guide interpretation and behavior (Batteau, 2000; Goodenough, 1994). The understanding of participants can change in tandem with the changing context of social interactions (Batteau, 2000; Goodenough, 1994). Culture is thus viewed as dynamic, emergent and socially constructed (Goodenough, 1994; Ravishankar, 2015; Suri & Abbott, 2013; Waring & Skoumpopoulou, 2012).

b) Organizational Culture

The introduction of culture into organizational studies was facilitated by the metaphor of the organization as a society, complete with unique norms, structures and socialization processes (Allaire & Firsirotu, 1984). This allowed concepts like ideology, beliefs, language, ritual and myths to be used in studies of the organization (Alvesson & Berg, 1992). Consequently, organizational culture is generally viewed as encapsulating the shared norms, symbols, practices, beliefs and values of organizational members (G. Hofstede, 1980; Schein, 2010). These implicit understandings contextualize the efforts of organizational members to make meaning, including efforts towards self-identity (Hatch & Schultz, 2002). Members in an organization thus contribute to the creation of organizational culture by bringing their individual beliefs and values into the organizational setting (G. Hofstede, 1980; Schein, 2010; Smircich, 1983). Hence, studies of organizational culture need to consider the views of both managers and non-managerial members (Alvesson & Berg, 1992).

In contrast to the view that organizational culture is the sum of the culture of organizational members, others argue that organizations have a life of their own, independent of the individuals in the organization and more than just a collection of their beliefs and behaviors (Martin, 2002; Smircich, 1983). The many different sub-cultures within the organization dynamically influence each other during the

execution of everyday business (Martin, 2002; Patel, 2015). Thus the organization itself makes a contribution to its culture through the symbols, rituals, ceremonies and processes that emerge as by-products of conducting its business (Martin, 2002; Smircich, 1983). Failing to recognize and position the organization as an independent entity can result in a failure to explore the interaction between the organization and its members, and produce an understanding of the organization culture that is incomplete (Lee, 2010).

c) Group / Project culture

In organizations, the workplace behavior of organizational members is influenced by more than just national culture (Karahanna *et al.*, 2005). Rather, culture at national, organizational and group level function simultaneously to influence behavior (Karahanna *et al.*, 2005). Groups within organizations develop collective belief systems (culture) (Quinn & McGrath, 1985) by drawing on the different traditions and history of their members (Goodenough, 1994). For instance, occupations contain accepted practices and rules that are socially relevant to the occupation (Golden, 1992). As organizations can contain groups from a multitude of diverse occupations, notions of what constitutes accepted practices and rules may differ across groups. In this context, the idea of a unitary organizational culture becomes meaningless (Batteau, 2000). Rather, organizations have a cultural makeup comprised of the symbols, stories, experiences and collective memories of different groups (Batteau, 2000).

In specialist organizational sub-units like IS projects (IS development teams) a similar situation prevails. Just as organizations can contain groups from a multitude of diverse occupations, IS projects can have team members with diverse skills and backgrounds (Project Management Institute, 2017b). As effective social interaction requires individuals to develop a shared sense of how things should be done (Goodenough, 1994), it is suggested the team will cultivate its own unique culture to shape the manner in which project activities are performed (Shore, 2008). The suggestion that projects have a culture of their own has been contested on the basis that the timeframe for most projects is too short to support the development of a discrete culture (Fellows & Liu, 2013). There are, however, certain characteristics of projects that set them apart from other temporary organizational groups. Projects are characterized by missing or ambiguous authority, changeable work teams with mixed skill sets and the requirement to produce a unique outcome (Tyssen *et al.*, 2013). Consequently, all projects involve new situations and relatively high levels of uncertainty (Howell *et al.*, 2010) requiring novel approaches from leaders and followers (Tyssen *et al.*, 2013). As culture develops in new groups through the adoption of values and beliefs that prove effective in dealing with new situations (Schein, 2010), the conditions contextualizing IS projects can predispose them to develop a culture.

d) Individual Culture

While culture is commonly defined in the context of group interaction (G. Hofstede, 1980; Schein, 1985), it has also been defined at the individual level (Goodenough, 1994; Goody, 1994; Straub *et al.*,

2002). Scholars supporting this level of culture make reference to individuals defining their culture in terms of language, religious, political or ethnic affiliation (Baskerville, 2003; Goody, 1994), each of which contains unique symbols, rituals, stories, myths and stylized action that contribute to the '*cultivation*' of culture (Batteau, 2000). Others highlight the capability of individuals to defy social consensus and norms, and recreate the social order through a renegotiation of the terms of engagement (Goodenough, 1994). For instance, researchers have shown how the social order has been changed through adjustments to behavior (Barendregt, 2008; Barzilai-Nahon & Barzilai, 2005; Gregory *et al.*, 2009), through changes to organizational structures and tasks, adjustments to skills, roles and power bases (Pan *et al.*, 2008; Waring & Skoumpopoulou, 2012) and through changes to the working practices and the work identity of organizational members (Boersma & Kingma, 2005; Koch *et al.*, 2013; Levina & Vaast, 2008; Suri & Abbott, 2013). Individual culture is also fluid and permeable, influenced by culture at multiple levels (Patel, 2015; Straub *et al.*, 2002). As an example, Karahanna *et al.* (2005) show how different circumstances can cause an individual to adjust their thinking and behavior by attributing importance to a particular sub-culture above another. These sub-cultures, or layers of culture, interact in dynamic and complex ways and may influence behaviors differently depending on historical and contextual circumstances. This implies that an individual could have at least as many cultures as the number of sub-cultures to which they have an affiliation (Signorini *et al.*, 2009).

e) IS Culture

The notion of an IS culture suggests the IS itself has embedded capabilities and perceived inherent values that inculcate it with a culture of its own (Leidner & Kayworth, 2006; Waring & Skoumpopoulou, 2012). The IS, or the way in which it is used, is commonly adapted to suit the culture of its users. For instance, a Jewish orthodox community circumvented expected resistance to new technology by adjusting the way in which the internet was used. This prevented possible dissent in the community that could have been damaging to their traditional structures (Barzilai-Nahon & Barzilai, 2005). An IS can also encapsulate symbolic elements in everyday practice and unify individuals by representing aspects of their lives that are held in common (Goggin, 2008). As an example, in Australia and Indonesia the mobile phone serves as a symbol of modernity, by providing a modern means of engaging in established social practices and norms (Barendregt, 2008; Goggin, 2008).

f) Multiple Levels of Culture

For some time researchers have recognised that the multiple levels of culture overlap (Schneider *et al.*, 2013), resulting in a complex weave of diverse cultures that simultaneously co-exist, influencing the assumptions, values and behavior of individuals (D'Mello & Eriksen, 2010; Karahanna *et al.*, 2005; Signorini *et al.*, 2009). The embedded nature of these different levels of culture is illustrated in Figure 2.

Figure 2. Embedded levels of culture (Adapted from Karahanna et al., 2005; Waring & Skoumpopoulou, 2012)

Importantly, researchers have recognised that the embedded nature of different levels of culture pose more than just the usual level of analysis challenges. Considering only one level of analysis in culture research can mask or exaggerate effects in empirical studies. Rather, level specific, emergent, and cross-level effects need to be considered (Yammarino & Dansereau, 2011). Researchers have explored the implications of the simultaneous integration of culture across multiple interconnected levels, and have considered the effects on individual behavior (Karahanna *et al.*, 2005), individual identity (Abbott *et al.*, 2013; D'Mello & Eriksen, 2010), cross-cultural collaboration (Ayouby *et al.*, 2012), the shaping of individual and group culture (Walsh & Kefi, 2008), work processes and practices (Abbott *et al.*, 2013; Leonardi, 2011; Levina & Vaast, 2008; Rai *et al.*, 2009) and the use of technology (Guo & D'Ambra, 2010).

2.1.2.2.3 Culture and Identity

Culture and identity are closely related concepts (Hatch & Schultz, 2002) accounting for a description of the two as "…"*conceptual cousins,"…*" (Kreiner, 2011: 465). While their close relationship sometimes confuses intellectual debate (Kreiner, 2011) the difference between the two is one of perspective (Fiol *et al.*, 1998) and they can be distinguished conceptually (Hatch & Schultz, 2002). In defining culture and identity it is easier to place culture in the conceptual domains of the '*contextual*', '*tacit*', and '*emergent*', whereas in contrast, identity appears to be more '*textual*', '*explicit*' and '*instrumental*' (Alvesson, 2011; Fiol *et al.*, 1998; Kreiner, 2011). The positioning of culture and identity in these contrasting conceptual domains is elaborated further in the discussion that follows.

Culture is popularly described as constituted of the assumptions, beliefs, values and meanings that cover a broad set of issues, providing individuals with an interpretive scheme and a referent context for making sense of '*reality*' (Alvesson, 2013; Martin, 2002; Pettigrew, 1979; Schein, 1985). Symbols encapsulate the beliefs and assumptions and emerge during the processes of negotiating a shared orientation to social reality, illustrating the emergent nature of culture (Alvesson, 2011; Kreiner, 2011). These components of culture are historically developed and maintained through social interaction. Culture thus covers meanings and beliefs which may not necessarily apply in situations where identity is defined (Alvesson, 2011). Identity therefore may only reflect a subset of a culture. It is this attribute of culture that contributes to its' conceptual positioning as relatively contextual. Furthermore, assumptions, beliefs, values

and meanings often occur beneath the level of consciousness (Alvesson, 2011; Batteau, 2000; Martin, 2002; Pettigrew, 1979; Schein, 1985). Thus culture is also conceptualized as tacit.

In contrast, self-expressed identity claims, contextualized by culture or other social meaning-making systems (Fiol *et al.*, 1998), are used by groups to make themselves known internally and externally (Hatch & Schultz, 2002). Symbols are used during the creation of group identity to demonstrate instrumentally '*who*' or '*how*' the group is, illustrating an instrumental dimension to identity (Kreiner, 2011). Identity is thus constituted through the thoughts and pronouncements of individuals, who must broadly agree on the distinctive features of the group that makes it unique and characterizes it across various situations (Alvesson, 2013). In this sense, identity is textual and it requires a level of explicit self-awareness (Alvesson, 2011; Kreiner, 2011). As identity formation requires conscious and reflexive consideration of feedback both internal and external to the group, it nurtures self-criticism and self-knowledge and is thus more open to change (Fiol *et al.*, 1998). While a shared view of culture may sometimes be a key theme in the construction of identity, many other cultural themes that contribute to understanding may be ignored in favor of the inclusion of non-cultural themes (Alvesson, 2011). Furthermore, identity is more influenced by current happenings than culture, and thus more superficial and susceptible to change (Alvesson, 2011).

Like culture (Martin, 1992; Schneider *et al.*, 2013; Yammarino & Dansereau, 2011), identity exists at numerous levels (Fiol *et al.*, 1998). Existing cultures at a particular level, or other social systems of meaning, provide the referent context for defining identity at that level (Fiol *et al.*, 1998). Similar cultural systems may also provide context at different levels of identity (Fiol *et al.*, 1998). For instance, one could define their identity as a '*software engineer*' in relation to a professional culture, while the profession could define its identity as '*information technology*'. In each case, similar cultural systems could be used to define identity at the particular level (Fiol *et al.*, 1998). See Figure 3 for an example of the referent context of identity. By situating definitions of identity within larger systems of meaning, identity answers the question '*Who are we?*' (Alvesson, 2011; Fiol *et al.*, 1998; Kreiner, 2011) and '*How are we?*' (Alvesson, 2011). In contrast, culture answers the question '*What does the relevant world look like?*' (Alvesson, 2011).

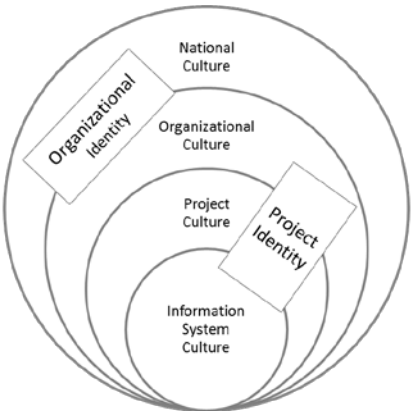


Figure 3. Identity and cultures (Adapted from Fiol et al., 1998)

2.1.2.2.4 Culture and Climate

The concept of climate, like culture, is firmly established in organizational theory and practice (Schein, 2011). As is the case for other abstract concepts, academic debates concerning the definition of climate abound, raising familiar difficulty in creating conceptual clarity (Schein, 2011). Climate in an organizational setting is commonly defined as the shared perceptions of organization members of their work experiences, including policies, practices and procedures, and the meaning they attach to these (Day *et al.*, 2014; Schein, 2011; Schneider *et al.*, 2013). Perceptions and meaning emerge from experiences and observations of behaviors in the organization that are expected, supported and rewarded (Schneider *et al.*, 2013). Initially, these perceptions were regarded as simply a manifestation of culture (Schneider *et al.*, 2013). However, culture and climate have since been distinguished conceptually (Schein, 2011). An important distinction between the two is that climate is associated with either a physical location or a set of relationships that may or may not be geographically dispersed. In contrast, cultures transcend time and space and may encapsulate the learning of whole groups of people (Schein, 2011). Despite this distinction, climate and culture are interrelated; perceptions (climate) are created through beliefs (culture), while perceptions also create beliefs (Day *et al.*, 2014). For instance, the behavior which leaders reward or punish cues group members on appropriate ways to focus their energy. At the same time, leaders provide a tangible glimpse of their values and beliefs and further embed these in the organizational culture (Schein, 2010; Schneider *et al.*, 2013). In this way, culture and climate complement each other, providing overlapping perspectives that can be used to understand social interaction in organizational settings (Day *et al.*, 2014; Schneider *et al.*, 2013). For instance, Gregory *et al.* (2009) used culture and climate in a study of healthcare facilities in the United States and found that expenses and patient satisfaction were influenced by the effect of culture on employee attitudes (climate). A leader can create an organizational climate by using authority to dictate behavior appropriate to local conditions and constraints (Schein, 2011). Empirical studies have shown for instance, that leadership approach and leadership characteristics are important antecedents in the creation of a service climate in organizations (Schneider *et al.*, 2013).

Although climate is inherently a multilevel concept (Yammarino & Dansereau, 2011), climate studies initially suffered from confusion between levels of analysis and levels of theory (Schneider *et al.*, 2013). Early climate researchers focused both on data collected at the individual level and aggregated to groups, as well as differences between the perceptions of individuals (Schneider *et al.*, 2013). Climate has however since been clarified as a group attribute and is positioned as an important conceptual contributor to organizational behavior (Schneider *et al.*, 2013). In common with organizational culture, organizations are considered to have multiple, simultaneous climates (Schneider *et al.*, 2013). Currently, scholars are placing an emphasis on clearly specifying the climate of study, like climates for justice, safety and service in efforts to improve insights into organizational processes and the climates they produce (Schneider *et al.*, 2013). Most contemporary climate studies however still focus on organizational sub-units, neglecting both

the organization as a unit of study and climate issues that occur simultaneously between and within organizations (Schneider *et al.*, 2013).

2.1.2.2.5 Approaches to the Study of Culture

There is no agreement on how culture should be studied (Schneider *et al.*, 2013). Students of culture are interested in how cultural manifestations, such as rituals, procedures, values and beliefs, are interpreted by individuals and how individuals ascribe meaning to the manifestations (Kappos & Rivard, 2008). Researchers conceptualize culture in relation to underlying assumptions about the status of social reality. The way in which meaning is attributed to the concept illuminates particular aspects for study, while others may remain unattended to (Smircich, 1983). Generally, researchers conceptualize culture from two contrary positions, described by Smircich (1983) in relation to organizations; 1) as something an organization 'has' or 2) as something an organization 'is'. In the first instance, culture is treated as a variable (Smircich, 1983). Researchers focus on manifestations of culture, like language, myths, stories and rituals (Smircich, 1983). Studies adopting this perspective make the assumption that culture can be understood through the patterns of relationships that exist. The issue of causality is important and researchers seek to discover culture (Smircich, 1983). In the second instance, the social world is seen to be subjective, consisting of symbolic relationships and meanings sustained through ongoing interactions (Smircich, 1983). Action in this social world is managed through a general understanding of consensually determined meanings that may appear to the outsider as orderly rules (Smircich, 1983). While researchers adopting this perspective might also focus on manifestations of culture like language, myths and stories, these manifestations are not viewed as artifacts, but rather as processes that generate and shape meaning. Researchers seek interpretations of culture (Smircich, 1983).

Martin (1992) describes three perspectives that researchers adopt to make sense of cultural manifestations; 1) integrated perspective, 2) differentiated perspective and 3) fragmented perspective. Researchers adopting the integrated perspective conceptualize culture as only comprising the meaning that is shared by group members. This perspective is premised on the belief that culture is derived from a stable core of tradition and is thus common to members who share this history and distinguishes them from other social groups (Patel, 2015). Elements in the culture that elicit ambiguity, lack of consensus or conflict are ignored and considered external to the group culture (Martin, 2002). Researchers who view culture from a differentiated perspective argue that members of groups don't always interpret manifestations of culture in the same way. Different groups ascribe different meanings to cultural manifestations, and these differences are illustrative of the existence of many sub-cultures or counter cultures in the group. Lastly, researchers adopting a fragmented perspective to culture studies focus on the diversity of interpretations of cultural manifestations, acknowledging that multiple views exist on most issues, and that these views are constantly changing. They do not expect to see consensus in the interpretation of cultural manifestations in large collectives (Martin, 2002). At the extreme of this perspective are those who claim there are as many

cultures as there are social contexts (Patel, 2015). While most researchers of culture tend to use just one perspective to make sense of cultural manifestations, these three perspectives occur simultaneously in different cultural contexts (Kappos & Rivard, 2008; Martin, 2002). If used together rather than as alternatives, the perspectives complement each other and provide the broader insight necessary to make sense of complex cultural situations (Kappos & Rivard, 2008; Martin, 2002).

2.1.2.3 Leadership

Leadership does not involve every interaction between superior and subordinate (Alvesson, 2011). Rather, leadership is concerned with the activities that shape the ideas, perceptions, values and feelings of individuals (Alvesson, 2013). These activities are seen as distinct from other activities a leader may need to be involved in, such as monitoring adherence of subordinates to organizational policies (Alvesson, 2013). The leader acts within a cultural context to interpret situations and develop meaning (Alvesson, 2013). Factors like shared beliefs concerning the profile of leadership candidates, the expected behavior of leaders and followers and the level of authority of leaders are used as the basis for understanding leadership roles and relationships (Day *et al.*, 2014). In this sense, leadership itself is a cultural manifestation. Thus, leadership can only be understood through an interpretation of the context of interaction and the relationship between superior and subordinate (Alvesson, 2011).

2.1.2.3.1 Leadership Approaches

Early approaches in leadership studies explained leadership in terms of the characteristics of individuals (trait theories), the style and behavior of successful senior managers (style theories) or by relating leadership to particular situational demands (contingency theories) (Gordon, 2011). While these approaches each focused on different aspects of leadership, all shared a common positioning of the leader as an extraordinary individual occupying a senior position in an organization (Gordon, 2011)). Organizational change, including a move to flatter organizational structures, the decentralization of control, and the use of teams ushered in a new leadership paradigm. Here, leaders are still viewed as extraordinary individuals who enjoy positions of privilege but they become managers of meaning more so than executors of power and influence (Gordon, 2011). Transactional, transformational and culture-based theories of leadership are included in this paradigm. Since the 1980s, transformational leadership theory has generated the most debate and study (Díaz-Sáenz, 2011). Transformational leaders attempt to morally uplift their followers and achieve positive social change by changing their basic beliefs and attitudes (Bass & Avolio, 1993; Díaz-Sáenz, 2011). Furthermore, it is suggested that transformational leaders enhance creativity (Mumford *et al.*, 2002) and are more likely to be found in innovative organizations (Bass & Avolio, 1993).

More recently, scholars have begun to address the concern that complex contemporary organizations put demands on leaders in vertical leadership structures that can't be met by a single individual (Shawn Burke *et al.*, 2011). Shared or distributed leadership approaches attempt to address this

challenge by relying on the assumption that those doing the work are best positioned to improve processes (Shawn Burke *et al.*, 2011). Leadership responsibilities are shared throughout a team, without relinquishing the vertical leadership (Shawn Burke *et al.*, 2011). Shared leadership is considered most useful for accomplishing interdependent and complex tasks, and less so in time-pressured environments or in the early stages of development activities (Shawn Burke *et al.*, 2011).This perspective blurs the boundaries between leaders and followers and challenges the notion of leaders as exceptional individuals (Gordon, 2011).

2.1.2.3.2 Leader Characteristics and the Role of the Leader

There is wide variation in the values and perceptions of effective leadership across national cultures (Guthey & Jackson, 2011). For instance, while transactional and transformational leadership theories prove successful in a Western context, they fail in countries like Japan where they are considered too manipulative (Steers *et al.*, 2012). Despite these differences, effective leaders are generally seen to engage in behaviors that are orientated towards their team (Guthey & Jackson, 2011). For example, leaders remove barriers impeding the progress of the team (Shawn Burke *et al.*, 2011), provide support in the form of ideas or social support (Mumford *et al.*, 2002), promote collaboration and transparency (Longo & Gibson, 2011; Mumford *et al.*, 2002), and provide environments that support the generation of ideas (Mumford *et al.*, 2002). Some leadership behaviors, like communicating a compelling vision, and demonstrating confidence in their followers, have also been found to be highly effective across cultures (Guthey & Jackson, 2011). The leadership of teams involved in innovative and creative work, such as IS development teams, introduces some specific demands of the leader. Mumford (2002) suggests that the leadership of creative groups requires involvement and mastery of organizational strategy, the ability to engage in organizational politics and engender collaboration from diverse specialists, strong technical expertise, good planning skills, and the ability to refrain from interfering in specialist work.

2.1.2.3.3 Culture and Leadership

Schein's (1985) influential work was instrumental in positioning the founding members of a group as the main architects of the group culture. Most scholars have since accepted that the values and beliefs of the founders form the basis of group decision making and constitute the initial group culture (Schneider *et al.*, 2013). Once the culture has been formed, it influences the type of future action the leader is able to take (Bass & Avolio, 1993; Schein, 1985). Leadership scholars however question an almost exclusive focus in cross-cultural research on how leadership is shaped by cultural constraints (Guthey & Jackson, 2011). They argue that leadership is not an inert concept but rather involves acts of initiative, commitment and influence on the part of the leader that can exert considerable pressure on cultural forces (Guthey & Jackson, 2011). Leaders can also change cultural norms through the individuals they attract to the group, the behaviors they reinforce, and the factors they pay attention to (Bass & Avolio, 1993; Mumford *et al.*, 2002). Furthermore, more recent leadership approaches position leaders as managers of meaning (Gordon,

2011), suggesting an ability to influence culture in this way. In contrast, culture scholars present a number of arguments to position leadership as a cultural outcome (Alvesson, 2011). Firstly, the vast majority of leaders operate under societal and group constraints that curb behavior and arrangements (Alvesson, 2011). For instance, an organizational culture may differ from an occupational culture, creating a need for the leader to negotiate the differences when charting arrangements (Alvesson, 2011). Secondly, followers interpret leadership acts through culturally guided cues that exist in social processes (Alvesson, 2011; Day *et al.*, 2014). The effects of leadership are thus determined by the meaning that followers attribute to leadership activity (Alvesson, 2013). Hence, leadership acts are interpreted differently in different cultures (Giritli *et al.*, 2013). Thirdly, to be effective, leaders need to continually interpret the in-depth meaning in the culture framing their actions and ground their behavior and arrangements in this context (Alvesson, 2011; Giritli *et al.*, 2013). Finally, leadership influences other cultural manifestations like an understanding of objectives. The instrumental nature of this influence is considered a cultural manifestation in its own right (Alvesson, 2011).

While culture exerts influence over leadership, leadership can still influence culture, creating a bi-directional relationship between the two concepts (Alvesson, 2011; Bass & Avolio, 1993; Guthey & Jackson, 2011). The notion of the interplay between culture and leadership has been evident in the academic literature for some time. Studies have examined the influence of culture on the emergence of different leadership styles (Giritli *et al.*, 2013; Nam Nguyen & Mohamed, 2011) and the contribution of leadership style to adjustments in cultural norms (Ke & Wei, 2008; Klein *et al.*, 2013; Pennington *et al.*, 2003; Sarros *et al.*, 2002). Notwithstanding these examples, there remain relatively few empirical studies examining the nature of the relationship between culture and leadership (Bass & Avolio, 1993; Giritli *et al.*, 2013; Schneider *et al.*, 2013).

2.1.2.3.4 Followers

The view of active leaders and passive followers has been challenged by those who acknowledge the importance of the followers' role in leadership processes. Here, leadership is positioned as a co-constructed reality, emerging from communicative processes occurring amongst leaders and followers (Blom & Alvesson, 2014; Fairhurst & Grant, 2010). Followers may have less influence than leaders (Block, 2003) but they nevertheless exert a strong impact in shaping the leadership process (Alvesson, 2011; Blom & Alvesson, 2014). For instance, by looking bored or grumpy, followers can directly inhibit leadership actions (Blom & Alvesson, 2014). If followers are not receptive to ideas put forward by leaders, the leadership impact is gradual and only partially achieved (Alvesson, 2011). Leaders therefore need to influence followers rather than force compliance through formal authority (Alvesson, 2011; Blom & Alvesson, 2014). In some cases it is followers who initiate leadership interventions, rather than leaders. Specialists for example, prefer leadership intervention only in extraordinary circumstances, such as a crisis requiring immediate and orchestrated action (Blom & Alvesson, 2015). In such situations, followers decide

what type of leadership they want, when and if leadership will be called for and how leadership action will be initiated (Blom & Alvesson, 2014). Followers hold the view that leaders are sometimes ignorant and could create problems; so while leadership intervention may have been initiated, followers still proactively influence or inhibit the leadership acts (Blom & Alvesson, 2014). Interestingly, the increasing empowerment of individuals through access to information and technology favors an increasingly diminishing need for leadership (Gordon, 2011).

2.1.2.3.5 Leaders in IS Development Teams

Contemporary leadership theories only partially address some unique characteristics of leadership that emerge in temporary settings (Tyssen *et al.*, 2013). Temporary organizational structures, such as exist during IS development initiatives, have unstable and discontinuous environments which introduces leadership challenges unique to these arrangements (Tyssen *et al.*, 2013). For instance, hierarchical authority is usually absent, reward and punishment forms of influencing are restricted, and heterogeneous specialties amongst participants creates difficulty in establishing common goals and curtails collaborative effort (Tyssen *et al.*, 2013). Contemporary leadership theories may focus, for example, on the complexity of interactions and relationships between leader and follower, but they do not fully address these complexities in settings with short time frames. Controversially though, others argue that short time frames negate the benefits of establishing relationships, and leaders should focus instead on task accomplishment (Müller & Turner, 2007). The mixed views of an effective leadership approach in temporary settings manifest in empirical studies of IS development as well. For instance, while evidence was found to support transformational leadership in an IS development team (Eseryel & Eseryel, 2013), leaders have been shown to effectively motivate IS developers either intrinsically, using a transformational leadership approach, or extrinsically through transactional leadership behaviors (Li *et al.*, 2012). Similarly, a balance between vertical and shared leadership was found to be the most optimal in achieving team effectiveness (Kakar, 2017).

A further consideration of the leadership of IS development teams concerns the nature of IS development work and the implications of this on leadership actions. IS development could be classed as an innovative organizational undertaking, as it contains many of the characteristics of innovative initiatives. For instance, innovative undertakings have ill-defined and novel tasks, a lack of predefined structures and processes, high levels of risk and no assurance of success (Mumford *et al.*, 2002). Participants in these initiatives are generally specialists, with intrinsic motivation, a professional attitude and accustomed to autonomy in their work situations (Mumford *et al.*, 2002). Scenarios such as these require leaders with technical expertise, creativity, sensitivity to cultural variations, the ability to construct solutions appropriate to all, and the need to focus on the creation of a stress and conflict-free environment (Mumford *et al.*, 2002). Influence tactics, rather than the exercise of power or pressure to conform, are considered more effectual in achieving objectives under these circumstances (Mumford *et al.*, 2002).

The use of power is problematic for other reasons as well. In organizational settings the hierarchical structure of the organization embeds an understanding of power relationships in the norms that organizational members use to make sense of work interactions; those higher in the hierarchy tend to have more organizational power (Gordon, 2011; Parry, 2011). In new world leadership thinking however, power comes from the interactions that occur during social processes (Longo & Gibson, 2011; Parry, 2011). Thus leaders can have power regardless of their position in the organizational power structure (Parry, 2011). However, historically constituted power relationships can continue to influence behavior, even in organizational settings that demand a shift in these relationships (Gordon, 2011), such as IS development initiatives.

2.1.2.4 Performance

Performance has been discussed in social science research from both an input and an outcome perspective (Küpers, 2017). An input view of performance focuses on the performing of events and defines performance "*as something to do, or go through; as a way to develop a set of skills; as a methodology, ...; as a way of knowing; and as a way of being*." (Denzin, 2003:28). If considering performance in process terms, then performing is the '*doing*' and performance is the '*done*' (Denzin, 2003). A process perspective on performance therefore further suggests that performing precedes performance (Küpers, 2017).

Performance has however been predominantly studied as the outcome of events (Küpers, 2017). From this perspective, the terms 'performance' and 'success' are closely related. For instance, performance is defined as "*The quality of execution of such an action, operation, or process; the competence or effectiveness of a person or thing in performing an action; specifically, the capabilities, productivity, or success of a machine, product, or person when measured against a standard*." (OED Online, 2017). In organizational studies performance is commonly defined as effectiveness, the achievement of organizational goals or objectives (Denison & Mishra, 1995; Klein *et al.*, 2013; Quinn & McGrath, 1985; Schneider *et al.*, 2013) or efficiency, referring to maximizing the output of resources (Belout, 1998). In IS development projects performance is increasingly assessed on the basis of both efficiency and effectiveness measures (Rahschulte & Milhauser, 2010).

Success is usually assessed in terms of particular criteria, which are context sensitive (Gregory *et al.*, 2009; Ika, 2009). Success criteria thus reflect dependent output variables that are valued in a particular context and against which performance will be assessed (Pankratz & Basten, 2017). In a review of the literature on project success published in project management journals, Ika (2009) found that researchers concur that success should be measured by both efficiency measures like time, cost and quality, as well as effectiveness measures that relate to the achievement of the desired business outcomes; efficiency measures relate to 'project management success' while effectiveness measures relate to 'project success'. Thus, assessments of the success of project teams in performing their duties in the course of the project lifecycle are generally based on efficiency measures (Ika, 2009). Furthermore, the prevalent view among

researchers is that success is a subjective rather than objective concept. This view is elaborated in the work of Cecez-Kecmanovic *et al*. (2014). Looking at performance from a performative perspective these researchers draw attention to the influence of sociomaterial practices on assessments of performance. Performative in this sense refers to a framing of practice consistent with the situated actions of individuals (Czarniawska, 2016). The social enactment of IS assessments by different social groups in the study by Cecez-Kecmanovic *et al*. (2014) were shown to create multiple and competing perspectives on IS success or failure. Thus a performative view of performance moves attention away from definitions of success or failure to a focus on how success or failure become to be defined as such (Cecez-Kecmanovic *et al.*, 2014). The focus here is on the relationships among actors involved in performance assessment processes; both the precarious nature of these relationships and the agency involved. Determinations of success or failure from this perspective are sensitive to the emergence and situated practice of performance assessments (Cecez-Kecmanovic *et al.*, 2014). A performative perspective can thus reveal conditions contextualizing the assessment process and in this way contribute to understanding different framings of success or failure. Importantly, this could change reporting on the success or failure of IS development projects (Cecez-Kecmanovic *et al.*, 2014).

2.1.2.4.1 Culture and Performance

The assumption that organizational culture contributes to performance improvements has generated much of the research interest in organizational culture amongst management and organizational scholars (Ogbonna & Harris, 2000). Culture was initially seen as a cohesive device in organizations and therefore a contributor to improved performance (Batteau, 2000). Schein (2011) goes as far as to suggest that anyone with experience in organizational settings is perfectly aware of the effects of culture on performance. However, the relationship between culture and improved performance has been difficult to establish (Denison & Mishra, 1995; Gregory *et al.*, 2009; Sørensen, 2002). The literature reveals several factors that complicate the relationship between culture and performance. Firstly, in order for culture to offer a sustained competitive advantage to an organization, it needs to be "*…valuable, rare and imperfectly imitable…*" (Barney, 1986:659). If the organizational culture does not possess these attributes, it implies other organizations have cultures that are similar, and can thus compete in the same way effectively removing any culturally-based competitive advantage (Barney, 1986). The cultural attributes that provide competitive advantage (valuable, rare and imperfectly imitable), by their nature, also make it difficult for an organization to adapt its culture in pursuit of economic improvements (Barney, 1986). Furthermore, the unique history of different organizations does not imply that the organizational culture of each will be unique (Martin *et al.*, 1983); different experiences can result in similar organizational cultures nullifying the potential for generating culturally-based competitive advantage. Secondly, organizations whose culture generates superior performance today may find the same culture to be a disadvantage in changing economic or competitive conditions (Barney, 1986). For instance, Sørensen (2002) has shown that

organizations with a strong culture, defined as a set of values that are intensely supported and widely shared across the organization (O'Reilly III, 1989), show variable performance in different circumstances. These organizations do not perform well during periods of external change, experiencing difficulty in aligning existing competencies to new and unfamiliar situations. The changing circumstances experienced in these environments cause the underlying cultural assumptions to become rapidly outdated, and the intense and widespread support of the culture raises resistance to organizational efforts to adapt (Sørensen, 2002). The benefits of a strong culture thus reduce in volatile environments. Finally, there may be organizational attributes besides culture that contribute to performance, like geographical advantages and even luck (Barney, 1986). Thus organizations may successfully maintain their culture yet experience decreasing financial performance through a lack of attention to other strategically important functions (Barney, 1986).

A popular approach to dealing with the complexities of relating organizational culture with organizational performance is the competing values (CV) framework (Quinn & McGrath, 1985). The CV framework describes four forms of organizational culture, *consensual*, *hierarchical*, *developmental* or *rational*, each representing an embedded theory of effectiveness (Quinn & McGrath, 1985). The framework (see Figure 4) supports the theory that organizations able to effectively balance each of these four culture forms will achieve the best performance results.

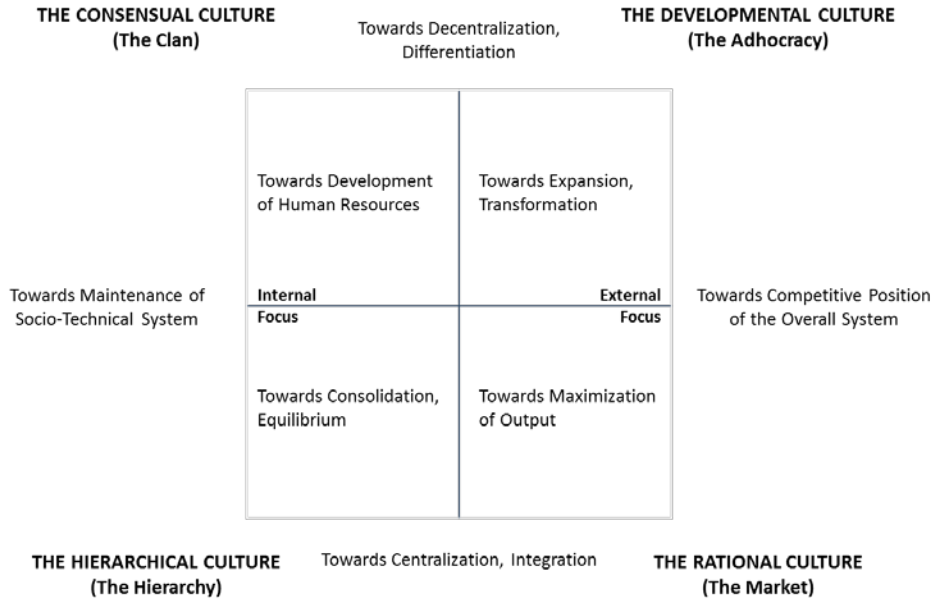


Figure 4. Organizational cultures with embedded theories of effectiveness (Adapted from Quinn & McGrath, 1985)

The dynamic context in which organizations operate makes it unlikely for one culture to provide the breadth of values and beliefs necessary to successfully interact under all conditions (Quinn, 1988). Organizations that focus too heavily on some culture forms at the expense of the others can be negatively impacted if changing contexts are more suited to the neglected cultures. Effective organizations thus strive to achieve an appropriate balance between the competing demands from each of the four cultures, rather

than trying to maximize one or another (Quinn, 1988). For instance, the results of a study conducted in healthcare facilities in the United States suggest that higher levels of patient satisfaction can be achieved with balanced rather than unbalanced cultures (Gregory *et al.*, 2009). Furthermore, Deshpandé and Farley (2004) found that the significance of the four culture forms varies across countries in patterns related to aspects of the national culture. The CV framework has also been used in IS studies, for example to show a relationship between organizational culture and the successful deployment of systems development methodologies (Iivari & Huisman, 2007) and to demonstrate how variations in organizational sub-cultures can impact the outcome of software process improvement initiatives (Mûller *et al.*, 2009).

2.1.2.4.1 IS Development Performance

Despite the research attention given to IS projects, they continue to suffer high failure rates (Avison *et al.*, 2006; Bloch *et al.*, 2012; El Emam & Koru, 2008; Hastie & Wojewoda, 2015) Much of the academic focus on project success is centered around debates on how success should be defined and could be improved (Mpazanje *et al.*, 2013). For instance, project management (PM) scholars challenge the definition of project success. Historical success measures of time, cost and quality are focused on organizational efficiency and are claimed to be insufficient to support long-term organizational viability (Rahschulte & Milhauser, 2010). Instead, it's argued that measures of success should consider the viability of projects and the relevance of their expected contribution to organizational results. Furthermore, the development of sustainable relationships among team members, the fostering of individual learning and the commitment of the organization to project work through formal structures are considered important measures of success (Rahschulte & Milhauser, 2010). Rather than a focus on success measures, other scholars have focused their research attention on the factors critical for successful project outcomes. Cooke-Davis (2002) identified 12 factors critical for success in managing delivery of a project and in realizing long-term benefits for the organization. These factors range from an adequate understanding and management of risk, to effective management of benefit realization across the portfolio of projects (Cooke-Davis, 2002). However, a review of the literature reveals numerous lists of critical success factors, some of which overlap while at the same time showing considerable variation (Fortune & White, 2006). Furthermore, studies have shown that critical success factors can differ across the project lifecycle (Plant & Willcocks, 2007). Efforts to find solutions to poor project performance have included examining the benefit of matching PM management structure, style and practices with the type or category of project (Crawford & Pollack, 2007; Sauser *et al.*, 2009), highlighting the relative importance of different PM tools and techniques (Besner & Hobbs, 2006) and establishing relationships between the relative use of PM practices and project success (Papke-Shields *et al.*, 2010). Importantly, some researchers in the PM domain are using the opportunities presented by the spread of PM practice into unconventional areas to introduce alternative research approaches and new perspectives on long standing issues like poor success rates (Ingason & Shepherd, 2014; Pollack, 2007). For

instance, there is growing recognition within the PM discipline of the importance of improving integration in PM research with what were traditionally managerial and organizational issues (Söderlund, 2004).

In the IS domain arguably the most influential effort targeted towards improving IS project success rates has been the introduction of an alternative to the historical waterfall approach and its variations to software development. The alternative agile software development methods first appeared in the early 2000s and attempt to introduce working software through flexible processes, short cycle times and stakeholder collaboration (Beedle *et al.*, 2001), in contrast to the fairly rigid, sequential processes, with long development cycles characteristic of the waterfall method (Royce, 1987). The contribution of agile methods to improved IS development success has had mixed results. Some studies show the agile method improving success through the delivery of higher quality systems (Azanha *et al.*, 2017; Tarhan & Yilmaz, 2014). However, in contrast, a study involving globally distributed software development showed no significant difference in project outcomes between the use of waterfall or agile methods by development teams (Estler *et al.*, 2014). IS researchers have considered other diverse aspects of software development in efforts to improve the success of IS development initiatives. For instance, studies have examined the contribution of control measures to the development process (Avison *et al.*, 2006; Cram & Brohman, 2013; Heiskanen *et al.*, 2008), and how social interactions (Sawyer *et al.*, 2010), knowledge sharing (Carugati, 2008; Lu *et al.*, 2011; Xiang *et al.*, 2013), a sense of moral responsibility (Chatterjee *et al.*, 2009), improvisation (Magni *et al.*, 2010), and the use of influence tactics (Narayanaswamy *et al.*, 2013) all contribute to the performance of the software development team.

2.1.2.4.1 Culture and IS Development Performance

Information systems (IS) projects continue to perform below expectations. Despite the efforts of researchers across the IS and project management (PM) disciplines to improve understanding of the factors contributing to poor project performance, failure rates remain unacceptable. Some PM researchers attribute the lack of success in improving performance to a failure to pay sufficient attention to the sociological nature of projects (Ingason & Shepherd, 2014; Winter *et al.*, 2006). While the IS discipline has long recognised the importance of culture to IS initiatives (Kappos & Rivard, 2008) relatively little attention has been paid to the relationship between culture and IS development in comparison with other IS research themes (see Figure 6). In particular, cultural incompatibility has been neglected as a potential source of problems for IS project teams (Ford *et al.*, 2003; Leidner & Kayworth, 2006), despite the likelihood of cultural variation among project team members. Cultural differences can ensue from the variety of specialist skills that characterize IS project teams (Project Management Institute, 2017), and the effects of globalization (Shore, 2008).

Factors that create problems in relating culture to performance, like the variety of ways in which culture is conceptualized (Alvesson, 2011) have contributed to some difficulties in building a cumulative view of the relationship. For instance, a variety of cultural factors have been studied in relation to IS project

performance; information exchange, trust and joint problem solving contributed to improved client satisfaction and management of costs in a study of offshore IS projects (Rai *et al.*, 2009), the use of cultural norms built cohesion and commitment to organizational objectives that in turn enhanced service quality (Klein *et al.*, 2013) and environmental pressure was found to be an important moderating variable on the relationship (Gu *et al.*, 2014). Other studies reveal the contextual sensitivity of the culture and performance relationship. In a synthesis of the literature on IS and culture Kappos and Rivard (2008) revealed that the alignment of IS development practices with the values and beliefs of developers facilitates the development process However, even in these situations, performance can be negatively affected if developers are confronted with novel development practices or novel IS characteristics (Kappos & Rivard, 2008).

2.1.2.4.2 Performance as a Cultural Manifestation

Assessments of performance require a degree of normative judgement from the assessor, and therein lies a further challenge in establishing a relationship between culture and performance (Alvesson, 2013). As cultural norms are an important factor in the establishment of performance criteria, some things seen as good or functional from one perspective may be considered bad or dysfunctional from another (Alvesson, 2013). In organizational settings, the variety and sometimes competing goals of organizational stakeholders introduces this variation in cultural orientation (Alvesson, 2013). While norms may serve to direct behavior, they offer only a superficial view of culture, that is, the shared understanding and meaning that has a broad and complex influence on thinking and sense-making (Alvesson, 2013). Furthermore, both norms and behavior are influenced by circumstances specific to the situation, and not just culture. Thus simplifying the relationship between culture and performance introduces the risk of producing misleading insights (Alvesson, 2013). In a study of corporate managers, Jackall (1988) highlights the extent to which factors like ambiguity and politics contribute to evaluations of performance. The complications introduced by this complexity encourage a short-term view of performance. These problems can be reduced by studying specific manifestations of culture and their performance consequences, avoiding broad conceptualizations of culture and outcomes far removed from the cultural manifestations, and an appreciation that the links between culture and performance are not linear or simple (Alvesson, 2013).

2.2 Reviewing the Literature – Second Phase

2.2.1 Goal and Method

The goal for this phase of the literature review was two-fold; to deepen understanding of research studies focused on culture and information systems (IS), and to present the results of the review at an IS conference[1]. Consequently, the approach adopted for this phase of the review was adjusted to introduce the levels of systematicity and transparency into the review process necessary to achieve these goals.

[1] The details of this literature review are described in a study published previously as proceedings of the International Conference on Information Resources Management - 2016. Full details are accessible as Geeling, Sharon; Brown, Irwin; and Weimann, Peter, "Information systems and culture - a systematic hermeneutic literature review" (2016). *CONF-IRM 2016 Proceedings.* Paper 40 http://aisel.aisnet.org/confirm2016/40

Different requirements at different stages of the research study can create the need for a contingent approach to the literature review process (Tate *et al.*, 2015). Systematicity in this phase of the literature review did not imply adherence to the protocols of systematic literature reviews; rather a systematic, hermeneutic approach was followed to produce a descriptive literature review (Paré *et al.*, 2015; Rowe, 2014). While consideration of a wide range of sources to address the interdisciplinary nature of the topic would usually be necessary, the available literature on culture is large (Leidner & Kayworth, 2006). Furthermore, as relevance of the article is more important than sample size in a hermeneutic approach (Boell & Cecez-Kecmanovic, 2014) a set of high quality journals was used as the source for the literature (see attachment 9.5 for a description of the selection process) rather than searches of the academic databases. The risk of missing important work through this approach is considered small as the most important contributions will most likely be found in the leading journals (Webster & Watson, 2002). The steps involved in the literature review process included:

i) Selection of the basket of journals
ii) Title and keyword search of journal articles
iii) Initial analysis of selected articles (review of abstract, introduction and conclusion)
iv) Detailed analysis of selected articles (full paper review)

Each step included a detailed description of activities in keeping with requirements for transparency and reproducibility, while iterative cycling back to previous steps occurred, as determined by the analysis and interpretation of text and in keeping with principles of the hermeneutic circle. The search criteria for the initial sample of literature were informed by criteria used in an earlier review of the IS and culture literature by Leidner and Kayworth (2006). The search criteria were changed slightly, from their "IT culture", "information systems culture" and "IT values" as follows:

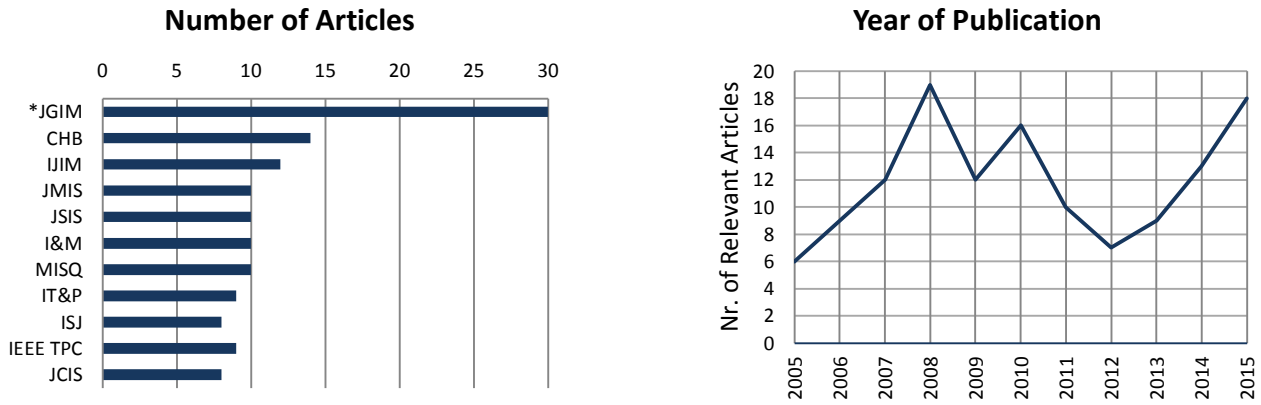
cultur and ("information system*" or technolog* or "IT value*" or "IS value*") or "IT cultur*" or "IS cultur*"*

The title and keywords of journal articles published in English over a ten year period, following on from the time of the review by Leidner and Kayworth (2006) until the present (2005 – 2015), were searched. The time period is aligned with the tendency for literature reviews to cover a period of ten years (Rowe, 2014). A total of 201 articles from 36 journals were identified (see attachment 9.5). The identification and analysis of literature and subsequent inclusion or exclusion of articles in the review followed multiple iterations, in keeping with the hermeneutic nature of the review process.

2.2.2 Results – Information Systems and Culture

The research attention given to culture is testament to its pervasiveness as a perceived issue in IS initiatives (Kappos & Rivard, 2008). This interest is illustrated through the publication of 201 articles between 2005 and 2015 in 36 high quality journals featuring IS and culture research[1]. Three of the journals published more than 10 articles over the period (see Figure 5). Notably, the Journal of Global Information

Management (JGIM) published more than double the number of articles of any of the other journals over the same period.



**JGIM(Journal of Global Information Management); CHB(Computers in Human Behavior); IJIM(International Journal of Information Management); JMIS(Journal of Management Information Systems); JSIS(Journal of Strategic Information Systems); I&M(Information and Management); MISQ(MIS Quarterly); IT&P(Information, Technology, and People); ISJ(Information Systems Journal); IEEE TPC(IEEE Transactions on Professional Communication); JCIS(Journal of Computer Information Systems)*

Figure 5. Descriptive statistics: leading journal outlets (8 or more articles) & publication year

While publications of IS and culture research in these journals appears to be on a downward trend since a peak in 2008, this seems to have reversed since 2012 and the current upward trend seems likely to continue. The number of articles published in 2015 almost matches the height achieved in 2008.

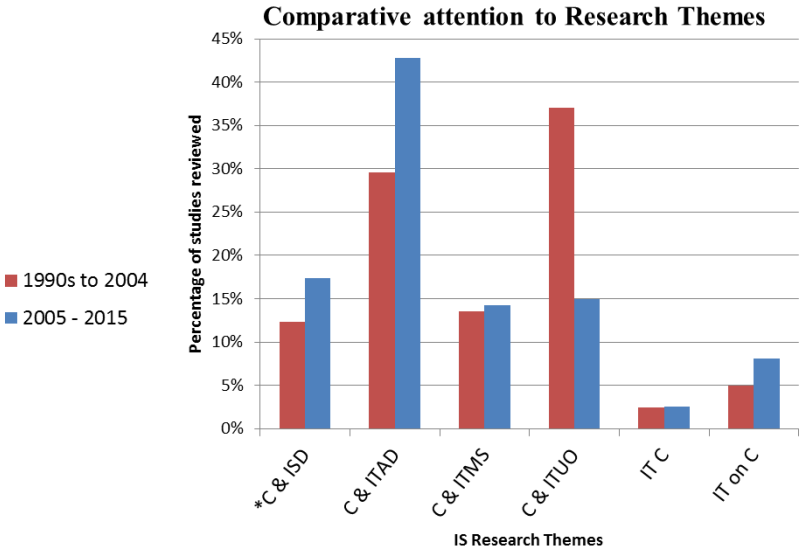
Researchers have considered the influence of culture in relation to a variety of IS research themes. Leidner and Kayworth (2006) categorized the IS and culture literature published in quality journals between the early 1990s and 2004 into six broad themes; '*Culture and ISD', 'Culture, IT Adoption & Diffusion', 'Culture, IT Use & Outcomes', 'Culture, IT Management & Strategy', 'IT's Influence on Culture'* and *'IT Culture'*. These themes are described in Table 2.

IS Research Themes	Description
Culture and ISD	The influence of aspects of culture on the processes, work practices and interactions involved in information systems development (ISD) (Leidner & Kayworth, 2006). The shaping of the information system itself through the influences of the prevailing culture(s) of those involved.
Culture, IT Adoption & Diffusion	The influence of culture on the adoption and diffusion of information technology (IT) (Leidner & Kayworth, 2006). The research could consider cultural influences on both the informational and technology aspects of an IS decision (Leidner & Kayworth, 2006). Research includes studies examining the acceptance of the IS, user preference for a particular IS, or efforts to understand the dynamics of adoption (Leidner & Kayworth, 2006).
Culture, IT Use & Outcomes	The research attempts to answer whether the same IT will be used in similar ways across cultures and result in similar benefits, or whether the same IT will be used differently across cultures and result in different benefits. Research questions also focus on what cultural values are best able to predict user satisfaction and IT implementation success (Leidner & Kayworth, 2006).
Culture, IT Management & Strategy	Research that addresses the question of how culture influences IT management and strategy (Leidner & Kayworth, 2006). The studies focus on any aspect of organizational governance in respect of information resources, including decision making, choice, or policy. Study topics include a focus on IT personnel, governance, and information ethics and privacy (Leidner & Kayworth, 2006).

IS Research Themes	Description
IT's Influence on Culture	The transformation of culture can include "*…changes to individuals' perceptions of status, hierarchy, and leadership, redistribution of power between state and local districts, and increasing use of computerized information for rational (as opposed to politicized) decision-making*" (Leidner & Kayworth, 2006:195). Cultural transformation could encompass changes in the prioritization of customer needs and customer service, a focus on performance and quality and increased flexibility in organizational processes (Leidner & Kayworth, 2006). Studies could also show how IS plays a role in the convergence of cultural values among team members (Leidner & Kayworth, 2006).
IT Culture	The research considers the values attributed to IS by a group (Leidner & Kayworth, 2006). Information systems by their nature are inherently symbolic, representing values of rationality, order, system and control (Leidner & Kayworth, 2006). The IS represents organizational assumptions concerning who should have control of the IS, the importance of the IS in strategy making, the valuation of IS skills, justification for IS expenditure, and who benefits (or loses) from IS (Leidner & Kayworth, 2006).

Table 2. IS research themes (Leidner & Kayworth, 2006)

A review of the literature for the period 2005 – 2015 using these same research themes showed little has changed in the focus of IS and culture studies[2]. A comparative analysis of the two periods (see Figure 6) shows the '*Culture, IT Adoption & Diffusion*' and '*Culture, IT Use & Outcomes'* themes as notable exceptions. Research interest in '*Culture, IT Adoption & Diffusion*' has grown to the extent that these studies now dominate the IS and culture literature. This could be attributed in part to the effects of globalization and the importance afforded to efforts to align the IS with the target market.



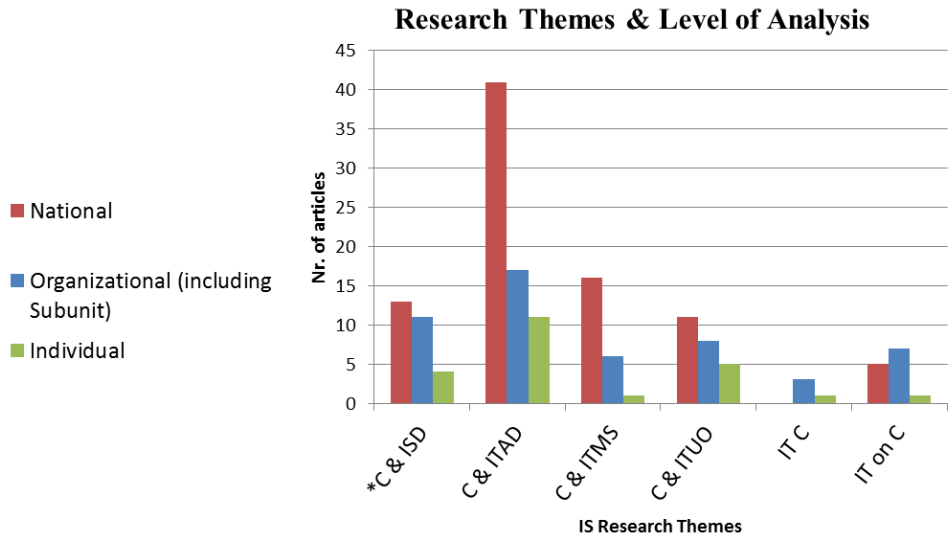
**Culture and ISD (C & ISD), Culture, IT Adoption & Diffusion (C & ITAD), Culture, IT Management & Strategy (C & ITMS), Culture, IT Use & Outcomes (C & ITUO), IT Culture (IT C), IT's Influence on Culture (IT on C).*

Figure 6. Past and present focus of IS and culture studies (Adapted from Leidner & Kayworth, 2006)

Most studies in IS consider culture at a national level (see Figure 7). This dominance of national level studies persists despite concern that analysis of culture at this level is too simplistic. For instance, it is argued that national, organizational, workgroup and individual levels of culture do not manifest in discrete, static layers (Signorini *et al.*, 2009), but rather overlap in dynamic ways creating complex cultural *milieus*

[2] Some studies use multiple levels and cover multiple themes

(Suri & Abbott, 2013; Ravishankar, 2015). However, studying culture at the national level is well entrenched in IS studies (Leidner & Kayworth, 2006; Zhang & Lowry, 2008). Furthermore, culture is a difficult concept to study and methodologies at a national level are popular and hence well tried. Together, these factors could be supporting this continued focus from IS researchers and contributing to the neglect of a dynamic view of culture and IS research (Gallivan & Srite, 2005; Leidner & Kayworth, 2006).



**Culture and ISD (C & ISD), Culture, IT Adoption & Diffusion (C & ITAD), Culture, IT Management & Strategy (C & ITMS), Culture, IT Use & Outcomes (C & ITUO), IT Culture (IT C), IT's Influence on Culture (IT on C).*

Figure 7. Analysis of IS and culture research between 2005 and 2015

The conceptualization of culture as a set of values continues to be popular in IS research and accounts for most empirical studies (see Table 3).

Research Method	Set of values	
	Y	**N**
Qualitative	26	20
Quantitative	72	5
Mixed	4	0
Total	**102**	**25**

Table 3. Number of studies conceptualizing culture as a set of values in current IS research

Values are relatively easy to recognize and measure in contrast to other cultural forms, like assumptions that are difficult to see, artifacts that are difficult to interpret (Schein, 1985) and symbols that need to be deciphered (Alvesson, 2011). IS researchers tend to attribute cultural values to subjects in empirical studies on the basis of national, organizational or workgroup affiliations, rather than explicitly measuring the cultural values of each subject (Gallivan & Srite, 2005). As much as 85% of empirical IS research has adopted this approach, fostering a view of culture as consistently understood, espoused and acted on by all members (Leidner & Kayworth, 2006). The result is an impoverished understanding of cultural differences that may exist, both within national, organizational and workgroup levels, and between these levels (Gallivan & Srite, 2005). Conceptualizing culture as a set of values is particularly prevalent amongst studies employing quantitative methods (see Table 3) and could be contributing to the predominance of this

method of inquiry in IS research. Researchers in IS use cultural values primarily to explore different aspects of aligning the cultures of nations (Chang *et al.*, 2015; Kleist *et al.*, 2015; Xin *et al.*, 2015), organizations (Rivard *et al.*, 2011; Seng *et al.*, 2010), individuals (Abbott *et al.*, 2013; Rai *et al.*, 2009) and the IS (Boersma & Kingma, 2005; Koch *et al.*, 2013; Walsh, 2014). These researchers tend to seek cultural extremes among their research participants. For example, many IS studies compare Eastern and Western cultures, contributing to the popularity of the United States and China for cultural studies (see Figure 8).

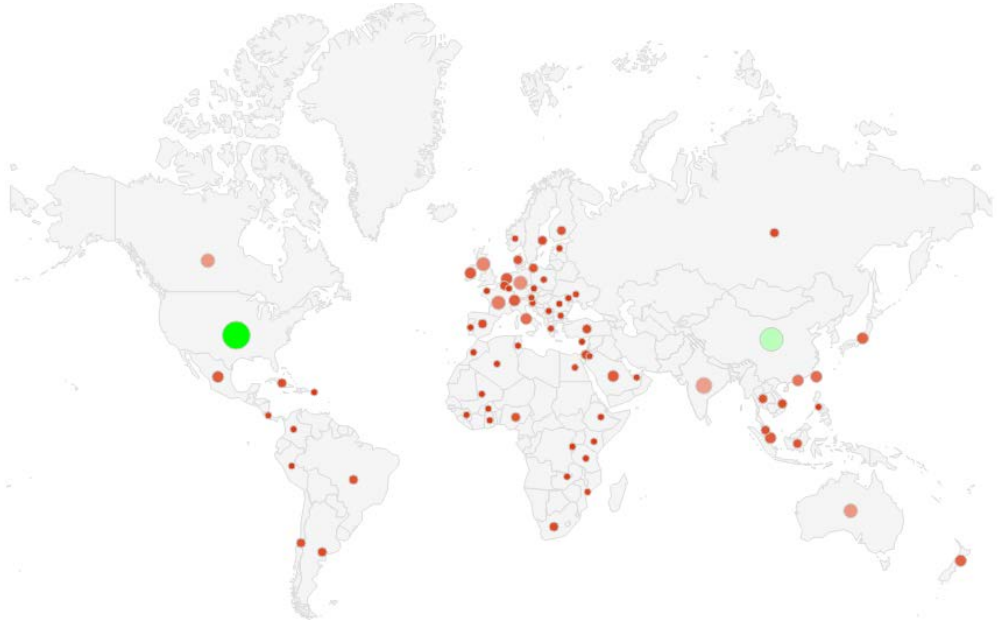


Figure 8. Geographical distribution of IS and culture studies

While research efforts focus on the benefits of aligning cultural values, efforts to understand the potential offered by cultural diversity are ignored.

The most popular measure of culture in IS cultural studies is Hofstede's (1980) national culture dimensions (see Table 4)[3]. Of the 127 studies identified in this review, 48 made use of Hofstede's national cultural indices.

Empirical Studies: Information Systems Literature	**Level of Culture**		
	National	**Organization**	**Individual**
Hofstede's Cultural Indices *(1998; G. H. Hofstede, 1980)*	48	3	6
Competing Values Framework (Quinn & McGrath, 1985)		3	
Others *(Used once)*	8	14	4
Culture not measured	19	27	7
Total	**75**	**47**	**17**

Table 4. Summary of measures used in cultural studies in information systems literature

The popularity of Hofstede's (1980) model persists despite concerns that the model implies a deterministic, cultural uniformity among members of a nation (Baskerville, 2003; Signorini *et al.*, 2009). This assumption is

[3] This analysis only includes the 127 empirical studies identified after the initial selection of articles. Some studies involve measurement at more than one level of culture or employ mixed methods. Thus the totals in this table exceed the number of empirical studies of 127. The '*Organization*' level includes organizational sub-units.

challenged with examples like the 48 countries in Africa having 98 cultures and the 32 countries of Western Europe having 81 cultures (Baskerville, 2003).

Generally, this tendency to treat culture as monolithic is a common feature of IS research (Leidner & Kayworth, 2006), extending beyond the study of national culture into the study of culture at the organizational level. Researchers tend to consider organizational culture to be uniform; differences in culture that can develop between different organizational sub-units are ignored (Harris & Ogbonna, 1998; Karahanna *et al.*, 2005). However, sub-unit cultures do emerge in organizations (Martin, 2002). While sub-units inherit the assumptions of the total organization, they also include additional assumptions specific to the tasks they perform or the unique experiences of their members (Martin, 2002). For instance, different underlying assumptions implicit in professions like engineering or accounting contribute to the emergence of sub-cultures in the specialist unit (Guzman & Stanton, 2009). IS development teams are an example of such a specialized organizational sub-unit.

Hofstede's framework has also been criticized for not acknowledging the complexity of culture at multiple levels (Baskerville, 2003; Signorini *et al.*, 2009). While Hofstede recognizes that individuals may hold several cultures inherited from the various social groups in which they interact, these different cultures are depicted as existing in discrete layers (G. Hofstede & Hofstede, 2005). IS researchers then often attribute cultural dimensions to subjects in empirical studies on the basis of national, organizational or work-group factors, rather than explicitly measuring the subjects (Gallivan & Srite, 2005). Instead, it is argued that these cultural layers overlap, creating cultural complexity in each individual that does not equate to clearly defined layers (Signorini *et al.*, 2009). Research that explicitly measures the subject appears necessary to reveal clearer links between individual attributes and behaviors (Gallivan & Srite, 2005).

The last 10 years has seen the emergence of IS studies considering culture at the individual level (see Figure 7). The conceptualization of culture at an individual level challenges the perspective of culture as a group phenomenon (Leidner, 2010). Rather than a focus on shared experiences, researchers are beginning to explore characteristics associated with an individual's social identity (Zhang & Lowry, 2008). This finding supports the supposition by Leidner (2010) that new research seeking to identify cultural differences should pay more attention to the individual. A similar focus on the individual is evident in studies exploring personality in the context of IS development (Yang *et al*., 2008; Licorish & MacDonell, 2015; Yilmaz *et al*., 2017). Studies at the individual level also tend to see the individual as simultaneously incorporating different cultures (Abbott *et al.*, 2013; D'Mello & Eriksen, 2010; Ravishankar, 2015), rather than conceptualizing culture as existing in discrete layers. Other studies, aligned to this thinking, explore the notion of an '*individual IT culture*' layer (Walsh, 2014) that represents a dimension of the individual's identity, related to the values and beliefs ascribed to IS by the individual.

Some commonality in the approach to IS and culture studies has created gaps in the existing literature. For instance, studies of culture in the IS domain tend to treat culture as a static phenomenon (Gallivan & Srite, 2005; Signorini *et al.*, 2009). More contemporary conceptualizations however recognize the dynamic nature of culture (Lawrence, 2013) and consider factors like the emergence of culture and cultural change. For instance, (Walsh *et al.*, 2010) showed how the culture of IS organizations could shift according to the experience of individuals and the interaction with other cultures and that this dynamic is especially evident in fast moving IS development contexts. Research that considers the dynamic nature of culture appears at the individual level too. Concepts like a '*negotiated*' (Suri & Abbott, 2013) or '*hybrid*' (Abbott *et al.*, 2013; Walsh, 2010) culture or culture as a '*discursive resource*' (Ravishankar, 2015) variously encapsulate the concept of culture as emergent, adaptive and dynamic, and position culture itself as a mechanism for dealing with cultural conflict. Related to these concepts is the emergent concept in IS research of '*cultural intelligence*' (Abbott *et al.*, 2013; Gregory *et al.*, 2009), referring to the ability of individuals to adjust to alternate cultural contexts (Earley, 2002).

2.3 Reviewing the Literature – Third Phase

2.3.1 Goal and Method

The goal for this third phase of the literature review was to use a subset of the literature identified in the second phase to propose a theory of how culture is implicated in IS development and to present this research at a reputable IS conference[4]. Articles allocated to the research themes *'Culture and ISD'*, *'IT Culture'* and *'IT Influence on Culture'* in the second phase were selected for this study. Definitions of these themes are provided in Table 2. The *'Culture and ISD'* theme categorizes studies directly related to culture in the context of IS development (ISD). As the technology artifact is a pivotal component of IS development, journal articles allocated to the research themes *'IT Culture'* and *'IT Influence on Culture'* were also included. This selection process produced a set of 24 journal articles from 14 journals (see attachment 9.5 for details).

An inductive approach was followed for the data analysis and theory building using a form of thematic analysis that looks for the latent meaning in the data (Braun *et al.*, 2015; Joffe & Yardley, 2004). This data-driven approach emphasizes the identification and interpretation of patterns occurring in empirical data (Grover & Lyytinen, 2015). The grounded theory methodology paradigm model was used to identify the core action and order the causal conditions, consequences, and intervening conditions. Software tools, primarily NVivo, were used to manage the literature and the analysis process.

2.3.2 Results – Cultural Implications in Information Systems Development

[4] The details of this research project are described in a paper published as proceedings of the International Conference on Information Systems (ICIS) 2017. Geeling, Sharon; Brown, Irwin; Weimann, Peter (2017) "Processes of Relating: Cultural Implications in Information Systems Development". Available at: http://aisel.aisnet.org/icis2017/Global-IS/Presentations/1/.

The themes identified in the analysis process and how these themes integrate into a theory of ***Cultural Implications in Information Systems Development*** (*CIISD*) is discussed in this section. The theory of *CIISD* is illustrated in Figure 9.

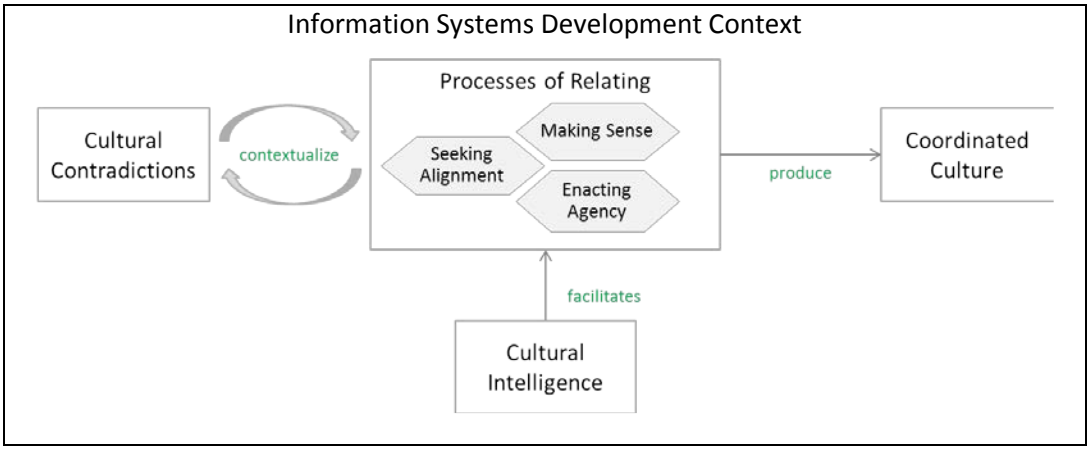


Figure 9. Theory of Cultural Implications in Information Systems Development (CIISD)

In the IS development context, individuals typically work together in teams to achieve an objective. Thus the theory of *CIISD* positions IS development as a form of social interaction, where the key concern (*Processes of Relating*) is contextualized by cultural influences emanating variously from individual, technology, sub-unit, organization and national levels of culture. Each theme in the theory of *CIISD*, namely *Cultural Contradictions*, *Processes of Relating*, *Cultural Intelligence* and *Coordinated Culture*, is described in the sections that follow.

2.3.2.1 Cultural Contradictions

IS development is conducted in a context that contains elements of *Cultural Contradictions*. These *Cultural Contradictions* arise in social interactions as a consequence of different stakeholders, both individuals and groups, holding different values, beliefs, norms and practices that emanate from cultural differences. *Cultural Contradictions* also arise through a mismatch of the values embedded in societal or organizational cultures and the values embedded in technology. Importantly, *Cultural Contradictions* represent the differences that make a difference to the harmony or effectiveness of social interactions. The studies in this review provide varying manifestations of *Cultural Contradictions* that **contextualize** the *Processes of Relating* during IS development. This process of contextualization is iterative and recursive; as individuals engage in *Processes of Relating*, previously unrecognized *Cultural Contradictions* may arise, creating the need for further *Processes of Relating* (Pscheidt, 2011; Waring & Skoumpopoulou, 2012). At the individual level, differences in national cultures can cause different attitudes to hierarchy, power and control (Levina & Vaast, 2008; Martinsons *et al.*, 2009), create disparity in the development of meaning and understanding (Avison & Banks, 2008), and manifest as different preferential behaviors (Dysart-Gale *et al.*, 2011; Gregory *et al.*, 2009; Suri & Abbott, 2013; Zhang *et al.*, 2007). At the organizational level, *Cultural Contradictions* arise from different values systems held by different professional groups (Iivari & Huisman, 2007), or by different organizational sub-units (Leonardi, 2011). These *Cultural Contradictions* could

manifest, for instance, as varying attitudes to status and authority (Levina & Vaast, 2008; Martinsons *et al.*, 2009; Pscheidt, 2011), to a misalignment over the prioritization and organization of work (Rai *et al.*, 2009; Suri & Abbott, 2013), or to misunderstandings emerging from cross-cultural communication (Avison & Banks, 2008; Rai *et al.*, 2009).

Cultural Contradictions can also arise through a mismatch of the values embedded in societal cultures and the values embedded in technology (Barendregt, 2008; Barzilai-Nahon & Barzilai, 2005; Sia *et al.*, 2009; Waring & Skoumpopoulou, 2012), through a misalignment of organizational values and the values embedded in a technology (Kaplan, 2011; Koch *et al.*, 2013), or through poor technological support of existing organizational practices (Boersma & Kingma, 2005; Clemmensen, 2012).

2.3.2.2 Processes of Relating

Stakeholders in the IS development process need to participate in *Processes of Relating*, where they are variously and iteratively engaged in *Making Sense*, *Seeking Alignment*, and *Enacting Agency* in their efforts to reach their objectives. In the process, previously unrecognized *Cultural Contradictions* may surface that then require further efforts at *Processes of Relating*. *Processes of Relating* represents the core theme in the theory of *Cultural Implications in IS Development*. The theme encapsulates the critical processes and activities group members engage in as they try to achieve objectives amidst *Cultural Contradictions*. While the activities and processes are described discretely in this paper, they may occur or not, and reoccur or not, in varying combinations throughout IS development, each time creating unique and complex interactions. A detailed discussion follows of the sub-themes in *Processes of Relating*, namely *Making Sense*, *Seeking Alignment*, and *Enacting Agency*.

2.3.2.2.1 Making Sense

Cultural beliefs, values, norms and practices provide the basis used by individuals to understand interactions in different social situations. Thus *Cultural Contradictions* can result in differences in behavior and responses to the same situation from different individuals. For instance, Avison and Banks (2008) showed how different attitudes to hierarchy between national cultures influenced the extent to which individuals participated in conversations during weekly update meetings of offshore IS development teams. Furthermore, the different meanings attributed to the same word and different expectations regarding appropriate responses interrupted the cohesion and flow of discussions. The lack of shared understanding created by these types of *Cultural Contradictions* can create misunderstandings that require more effort than usual to correct (Avison & Banks, 2008).

In situations involving *Cultural Contradictions*, individuals engage in *Making Sense* by drawing on past experience and knowledge in adapting and implementing technology (Boersma & Kingma, 2005). In this way, culture becomes involved in the *Making Sense* process by providing individuals with '*cultural resources*' to deal with the situation. For instance, individuals draw on cultural resources when specifying requirements for software development (Leonardi, 2011), while position and resources helped some

managers improve collaboration effectiveness in offshore application development projects (Levina & Vaast, 2008). *Making Sense* of a new situation involves developing an understanding of new possibilities and feasible solutions. In the process, the different combinations of cultural resources used to find a solution open up the possibility of a reinvention of the culture (Leonardi, 2011). IS development teams use meetings and workshops (Pscheidt, 2011) and descriptions and examples (Dysart-Gale *et al.*, 2011) to understand the meaning in new situations. *Making Sense* can also involve the establishment of a strongly shared vision or common goal (Pan *et al.*, 2008). Establishing a successful shared and compelling future vision requires the right leadership. For instance, leadership was crucial in articulating a vision, developing transparency and engendering trust among organizational members of a Singapore library, facilitating the successful introduction of new technology into operating procedures (Pan *et al.*, 2008). Importantly in this study, the leaders were able to demonstrate the benefits inherent in *Cultural Contradictions* arising from different professional specializations, mitigating the negative impact of those cultural boundaries.

Collaboration and interpersonal negotiation are integral activities conducted during *Making Sense* efforts (Boersma & Kingma, 2005; Dysart-Gale *et al.*, 2011; Kaplan, 2011; Levina & Vaast, 2008). Communication is an important part of these activities and is culturally textured. For example, rules of engagement differ across cultures, causing asymmetry of participation between culturally diverse individuals in development teams (Avison & Banks, 2008), while Clemmensen (2012) showed how communication between a software evaluator and a user mediated a sense of the usability of the technology during usability testing of IS designs. Some *Making Sense* processes require high levels of trust (Lowry *et al.*, 2010). Trust formation is particularly important in IS development teams (Lowry *et al.*, 2010) where high levels of trust are beneficial to team performance (Rai *et al.*, 2009). However, the formation of trust can differ across cultures. For instance, Lowry *et al.* (2010) found that different attitudes regarding adherence to group norms in national cultures made a difference to trust formation in decision making groups. Furthermore, a study of consumer trust in internet businesses found that customer endorsement and website reputation had different influence in diverse national cultures, indicating a need for varying trust formation approaches (Sia *et al.*, 2009).

2.3.2.2.2 Seeking Alignment

Seeking Alignment are activities adopted by organizational members in their efforts to deal with *Cultural Contradictions*, where effort is focused on aligning differences in cultural values. There are different ways in which *Seeking Alignment* can be approached. *Seeking Alignment* can be achieved by allowing modifications to an IS system to support user values (Koch *et al.*, 2013), through changes in organizational policy (Koch *et al.*, 2013; Rai *et al.*, 2009), or by changing organizational practices to mediate *Cultural Contradictions* in offshore application development projects (Levina & Vaast, 2008). *Seeking Alignment* is not always triggered by organizational leaders. Suri and Abbott (2013) showed how group members of an Indian IT outsourcing company aligned their behavior in different ways to accommodate

Cultural Contradictions. Their *Seeking Alignment* efforts involved adapting existing practices, adopting entirely new practices or considering existing practices from a new perspective (Suri & Abbott, 2013).

2.3.2.2.3 Enacting Agency

Enacting Agency represents the dynamic interplay between culture and technology during *Processes of Relating*. At times the technology, or the way the technology is used, is adapted to suit the culture. For instance, a Jewish orthodox community was able to circumvent expected resistance to new technology by adjusting the way in which the internet was used. This prevented possible dissent in the community that could have been damaging to their traditional structures. Instead, the adjustments to internet usage have preserved some traditional practices, while also changing and strengthening others (Barzilai-Nahon & Barzilai, 2005). In other studies, the culture is adapted to better suit the technology. For example, an organization used a combination of interventions to address organizational policy, employee relationships and leadership approach to improve alignment between the organizational culture and their social media sites during implementation of a digitally enabled social network (Koch *et al.*, 2013).

Enacting Agency encapsulates how meaning and materiality are simultaneously created through the enactment of everyday practice. For instance, Kaplan (2011) demonstrates how the capabilities inherent in PowerPoint facilitated collaboration in strategy making in an organization. The technology became an actor in strategy making practices by virtue of its ubiquitous nature and the manner in which it facilitated collaboration, negotiation and the adjudication of decisions. Similarly, Lowry *et al.* (2010) showed that interpersonal trust can be improved by collaboration technology that simulates the cultural dimension of social presence, while Zhang *et al.* (2007) showed that if collaborative software is not aligned with the communication needs of a culture, factors like majority influence in decision making do not follow expected cultural norms. Cultural tendencies can thus be nullified if cultural values do not align with the values inherent in the technology (Zhang *et al.*, 2007).

Enacting Agency also encapsulates symbolic elements in everyday practice. Technology can act to unify individuals by representing aspects of their lives that are held in common (Goggin, 2008). Individuals can attribute meaning to technology and in this way technology can become an important determinator in the search for solutions (Leonardi, 2011). For instance, understanding the benefits and possibilities inherent in new technology allowed different stakeholders to reach consensus on an effective communication strategy for different audiences during the design of a prototype information-management system (Dysart-Gale *et al.*, 2011). In Australia and Indonesia the mobile phone serves as a symbol of modernity, by providing a modern means of engaging in established social practices and norms (Barendregt, 2008; Goggin, 2008).

2.3.2.3 Cultural Intelligence

The *Processes of Relating* can be **facilitated** by stakeholders who possess *Cultural Intelligence*. Stakeholders with *Cultural Intelligence* have the ability to bridge *Cultural Contradictions* in ways that

improve the enactment of the *Processes of Relating*. The theme *Cultural Intelligence* encapsulates the ability of individuals to understand and adapt to new cultural contexts. Gregory *et al*. (2009) showed how individuals with high *Cultural Intelligence* participating in a software reengineering project were able to interpret and understand the behavior of others by situating the behavior within a broader context. These individuals are able to recognize the benefits in different behaviors and this recognition motivates them to adapt their own behavior to accommodate the differences (Gregory *et al.*, 2009). In effect, individuals with *Cultural Intelligence* are able to effectively bridge the gaps between different cultures, allowing effective mediation in cross-cultural discussions (Avison & Banks, 2008), improving collaboration by levelling status discrepancies in off-shoring relationships (Levina & Vaast, 2008) and aligning expectations between culturally diverse clients and vendors (Rai *et al.*, 2009). In these ways, individuals with *Cultural Intelligence* **facilitate** the activities involved in the *Processes of Relating*. Importantly, *Cultural Intelligence* skills can be developed through training workshops, visits to culturally diverse sites and through team building exercises (Gregory *et al.*, 2009).

2.3.2.4 Coordinated Culture

Processes of Relating **produce** a *Coordinated Culture*. The theme represents a reconstitution of culture as the result of cross-cultural interaction. The *Coordinated Culture* contains some elements of the contradicting cultures as well as new elements not seen before (Suri and Abbott 2013). The *Coordinated Culture* represents the result of understanding *Cultural Contradictions* and finding ways to accommodate cultural differences during *Processes of Relating*. In this process a new cultural context is created by dropping some existing elements, adopting new elements and rearranging others to **produce** a *Coordinated Culture*. In essence, the *Coordinated Culture* is a relative balance of cultural elements emanating from salient stakeholders. Producing the *Coordinated Culture* includes adjustments to behavior (Barendregt, 2008; Barzilai-Nahon & Barzilai, 2005; Gregory *et al.*, 2009), changes to organizational structures and tasks, adjustments to skills, roles and power bases (Pan *et al.*, 2008; Waring & Skoumpopoulou, 2012) and changes to the working practices and the work identity of organizational members (Boersma & Kingma, 2005; Koch *et al.*, 2013; Levina & Vaast, 2008; Suri & Abbott, 2013). The result is an environment characterized by high levels of trust, shared understanding and effective conflict resolution (Gregory *et al.*, 2009), facilitating a participative context for social interaction.

The studies suggest that a successful *Coordinated Culture* is not achieved without targeted effort. For instance, the alignment of organizational values with values embedded in a software development methodology (SDM) was not sufficient to produce a positive attitude towards the SDM from both developers and managers (Iivari & Huisman, 2007). The authors suggest that cultural values may differ between different actor groups, despite the sharing of a common organizational culture, and these differences account for differences in attitude. In contrast, an organization that implemented a disciplined plan to resolve culture conflict was able to successfully implement social media sites into organizational

practice (Koch *et al.*, 2013). The organizational culture was changed through training interventions that taught members the benefits of the technology, and narrowed the gap between the values embedded in the technology and the values of the individuals. Similarly, the successful implementation of an Enterprise Resource Planning system required purposeful adjustments to organizational structures, roles and work practices as well as adjustments to the new technology (Boersma & Kingma, 2005). In another study, middle managers intervened to level status disparities between cultural groups and create the new *Coordinated Culture* (Levina & Vaast, 2008).

2.4 Conclusions from the Literature Review

This conclusion seeks to problematize existing studies of culture, leadership and performance in the context of IS development. From the preceding review of the literature, two areas have been isolated as relevant in the research context. Firstly, the more contemporary conceptualization of culture as dynamic and fluid positions the social world as subjective, consisting of symbolic relationships sustained through ongoing interactions that generate and shape meaning (Abbott *et al.*, 2013; Ravishankar, 2015; Suri & Abbott, 2013; Walsh, 2010). However, conceptualizing culture in this way implies there could be as many cultures as there are social groups, making useful comparisons between cultures problematic (Patel, 2015). This complication may be contributing to the popularity of treating culture as a static variable in IS studies that seek to compare the cultures of different groups. These studies conceptualize culture as a set of values (see Table 3) and use quantitative methods to distinguish one group from another and explain differences in behavior among group members. The dominance of this approach stifles the emergence of diverse insights possible through the application of alternative cultural lenses.

Secondly, most research on culture, leadership and performance positions these as separate concepts. This introduces a question concerning the usefulness of conceptually separating the three in IS and culture research. This separation may, for instance, be contributing to the alternative views on the relationships between the concepts. For instance, Guthey and Jackson (2011) point to an almost exclusive focus in cultural research addressing the manner in which a leader is shaped and molded by their cultural context. Scholars aligned to this view conceptualize leadership itself as a cultural manifestation (Alvesson, 2011). Thus, leadership is a product of the context of interaction and the relationship between superior and subordinate (Alvesson, 2011; Day *et al.*, 2014). In contrast, leadership scholars argue that leadership is not an inert concept but rather involves acts of initiative, commitment and influence on the part of the leader that can exert considerable pressure on cultural constraints (Guthey & Jackson, 2011). They point out that leaders can also change cultural norms through the individuals they attract to the group, the behaviors they reinforce, and the factors they pay attention to (Bass & Avolio, 1993; Mumford *et al.*, 2002). Similarly, a simple relationship between culture and performance has been difficult to establish (Alvesson, 2013; Denison & Mishra, 1995; Gregory *et al.*, 2009; Sørensen, 2002). Although scholars agree that a connection between culture and performance does exist (Alvesson, 2013; Schein, 2011), often any causal relationship

is speculative or attempts to separate culture from outcomes prove difficult (Alvesson, 2013). While Alvesson (2013) suggests this problem is indicative of conceptualizations of culture that are too broad, an alternative view could instead question the ontology of separateness applied to these concepts.

By investigating culture, performance and leadership as separate concepts, studies fail to capture the multiple and dynamic ways they become constitutively entangled in social interaction. It is anticipated that acknowledging the constitutive and entangled nature of the three concepts will facilitate the emergence of new insights, and improve understanding of poor IS project performance.

2.5 Research Question

Considering the problematic aspects of the research exploring culture, performance and leadership and the context and nature of the problem described previously, an explanatory study is proposed to address the following primary research question:

How are culture, leadership and performance implicated in information systems development projects?

In order to explain the nature of the relationships between culture, leadership and performance, the primary research question will be split into 4 secondary questions.

Secondary Research Question 1: ***What is the relevance of national and organizational cultures for IS development projects?***

SRQ 1.1 What characteristics of the national culture influence the underlying assumptions about reality and human nature held by organizational members?

SRQ 1.2 What characteristics of the organizational culture influence the underlying assumptions about reality and human nature held by organizational members?

SRQ 1.3 What symbolism occurs in the organization?

Secondary Research Question 2: ***How is culture implicated in leadership?***

SRQ 2.1 How does culture influence leaders of IS development projects?

SRQ 2.2 How does the organizational culture respond to leadership actions?

Secondary Research Question 3: ***How is culture implicated in performance?***

SRQ 3.1 How is culture implicated in definitions of performance by members of IS development projects?

SRQ 3.2 How is culture implicated in defining success criteria by members of IS development projects?

SRQ 3.3 How is culture implicated in the assessment of performance by members of IS development projects?

SRQ 3.4 How do success criteria and performance assessment influence the performance of members of IS development projects?

Secondary Research Question 4: ***How is leadership implicated in performance?***

SRQ 4.1 How does leadership influence the performance of organizational members in IS development projects?

A nomological net explicating the core concepts and their relationships is shown in Figure 10.

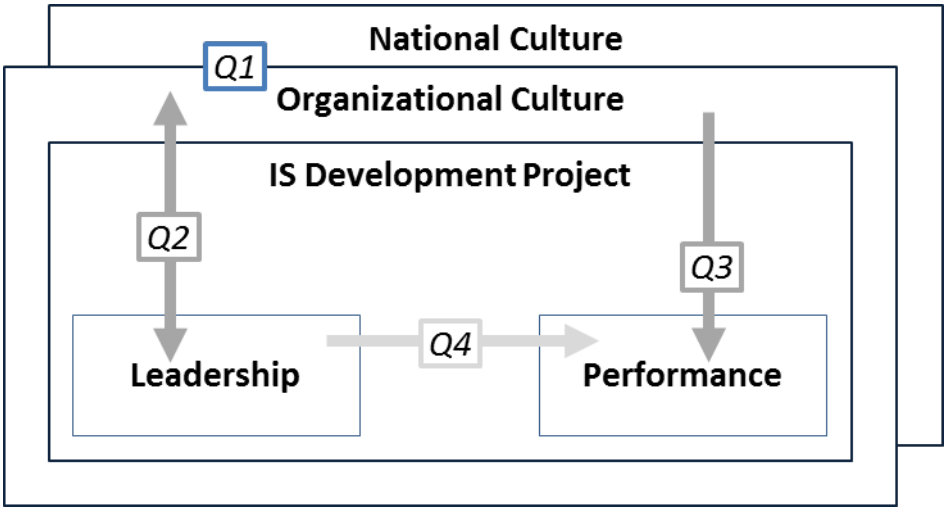


Figure 10. Nomological net of the core concepts

The next chapter describes how theory is used in this research study.

3 THEORETICAL FRAMEWORK

Theory is understood and used in different ways in research studies. This chapter is concerned with the positioning of theory, both existing and emerging theory, in the context of this research study. It begins with a description of what is meant by the term '*theory*' in IS research and presents an ongoing academic debate in information systems (IS) research stemming from divergent views on what theory means and how it is used. Further concerns regarding the propensity in IS research to make use of grand theories borrowed from reference disciplines is discussed, as well as approaches that can alleviate problems associated with this. I then discuss the requirements of an interpretive theory and accepted principles for assessing theory from an interpretive stance. This is followed by a discussion of the way existing theory has been used in this study. It includes a description of two theories and the validity of the choice of these in the context of this research as i) a sensitizing lens for data collection, and ii) the theoretical underpinning of the data analysis and theory development.

3.1 Definition of the Term "Theory"

A theory is an abstract entity that serves to organize the empirical world (Bacharach, 1989; Gregor, 2006). Theories aim to describe, explain and enhance understanding, and sometimes provide predictions of future events (Gregor, 2006). The primary goal of theory then is to answer questions of 'how', 'why' and 'when' (Bacharach, 1989; Gregor, 2006). Notwithstanding a concern regarding the level of precision applied to the '*theory*' concept in information systems (Lee *et al.*, 2014) limits on what can be classed as a theory are generally described. For instance, descriptions of data, including data categorization, typologies and metaphors are not theories (Bacharach, 1989), nor is knowledge of an individual event (Gregor, 2006). Rather, theory is expected to have at its core abstraction and generalization about phenomenon, interactions and causation (Gregor, 2006).

The nature of a theory can be influenced by the domain of interest it serves (Lee *et al.*, 2014). For instance, theory in IS must address its distinguishing characteristic concerning the use of artifacts in human-machine systems (Gregor, 2006). Gregor (2006) proposed a taxonomy of five interrelated theory types to classify IS theories in respect of how the four central goals of theory, analysis, explanation, prediction and prescription, are handled. Differences between the five types of theory relate to the extent to which the four central goals are addressed, and whether testable propositions and / or causal relationships are indicated in the theory. Thus at the one extreme, theories of Type I simply analyze and describe phenomena, while at the other extreme, theories of Type V give explicit prescriptions of how to do something.

3.2 The Use of Theory in IS Research

Theory is considered to be an important focus of IS research, setting academic researchers apart from consultants and practitioners (Gregor, 2014; Hassan & Lowry, 2015; Lee, 2014). This view of theory is however, not unanimous; there are contrary views on the value and use of theory in IS research. For instance, Avison and Maulerent (2014) initiated an academic debate by proposing a '*theory light*' stance on

IS research in reaction to what they describe as an overemphasis on theorizing in IS. They suggest the overemphasis is a consequence of using theorizing as a mechanism for enhancing the status of the discipline. The concerns voiced by these authors relate to the unintended effects of this focus on theory. It could for instance result in research strong in the use of theory but contributing little in the way of new knowledge or practical usefulness being privileged by referees of academic publications over '*theory light*' but interesting and novel contributions (Avison & Malaurent, 2014). Reviewers might be rejecting what could be interesting papers that are heavy on data but light on theory, despite the data revealing perspectives that later could lead to interesting or novel theory. Similarly, researchers could be ignoring potentially interesting data that doesn't fit existing theory. The authors suggest that there are contributions to be made other than theory and these should be given equal consideration (Avison & Malaurent, 2014). The concerns raised by these authors are however argued as more indicative of issues with journal norms and epistemological issues in theorizing, rather than attributable to an overemphasis on theory in IS research (Gregor, 2014). Gregor (2014) goes further to suggest that epistemological practice in IS favoring deductive logic and theory testing is a more important problem stifling innovation and slowing the progress of new knowledge. Hence, she suggests an appreciation of the usefulness of inductive reasoning is what's needed to spark creative and innovative research, rather than a '*theory light'* approach (Gregor, 2014).

Others argue that the dearth of creative research in IS is due to a lack of alignment concerning the definition of theory rather than an overemphasis on theory by journal referees (Lee, 2014; Markus, 2014). Lee (2014) argues that different categories of science exist which suggests that a nuanced view of theory is required. Using an example used by Avison and Malaurent (2014) to illustrate their point of '*theory light*' research, Lee (2014) illustrates how the same work can be used to effectively illustrate research rich in theory, if the possibility is accepted that theory is not the same across all of science (Lee, 2014). This illustration reveals that multiple types of theories exist, and rather than assessing theory on the basis of one type being considered better than the other, it should be assessed in terms of appropriateness to the subject matter (Lee, 2014; Markus, 2014). Markus (2014) further argues that the problem is exacerbated by opportunities and challenges in IS that don't comfortably fit any of three divergent views in the IS field relating to what theory is and what constitutes a theoretical contribution. Firstly, those who understand theory to mean grand theory, a '*grand theory view of theory'*, will expect a theoretical contribution to show application of the grand theory to new contexts or phenomena. A second view, the '*theory of provenance view of theory'*, concerns an understanding of theory as applying to concrete sets of IS phenomena, where supporters expect the theory to have a small number of concepts and explicit links between antecedents and outcomes (Markus, 2014). Finally, a further understanding of theory, a '*body of knowledge view of theory'*, is as a body of knowledge about particular areas of interest. Here, the body of knowledge is characterized by many diverse elements, like alternative definitions or theoretical perspectives and a contribution could consist of the addition of something new in these areas (Markus, 2014).

Notwithstanding these three views of theory and theoretical contributions, there are nevertheless areas of research in IS that don't comfortably fit any of these three (Markus, 2014). Thus Markus (2014) proposes the addition of two new types of theory to the five already described by Gregor (2006), '*theories of the problem*' and '*theories of the solution*'. Together these new types address the gaps created by a lack of knowledge of the societal impact of new technology, like online gaming, and the extent of elaboration and refinement required to grand theories before they could contribute to an understanding of these phenomena (Markus, 2014). Unless an understanding of theory in IS is extended to accommodate these types of considerations, IS researchers run the risk of missing opportunities to make theoretical and empirical contributions in these areas (Markus, 2014).

Aligned with concerns stemming from divergent views of what theory is and what constitutes a theoretical contribution, are concerns relating to the way theory is used and produced in IS research studies. Of particular concern is the approach classified by Grover and Lyytinen (2015) as mid-range theorizing, where IS researchers apply minor modifications and extensions to grand theories adopted from reference disciplines and test the modified theory in an IS context. Invariably this approach results firstly in IT becoming an exogenous component in the theory, reduced to an independent variable, mediator, or moderator and contributing to a lack of research that theorizes IS concepts and propositions (Grover & Lyytinen, 2015; Hassan & Lowry, 2015). Secondly, the approach results in theory that lacks novelty and perpetuates a fragmented knowledge base (Grover & Lyytinen, 2015; Hassan & Lowry, 2015). Furthermore, the approach raises questions as to whether true understanding of IT is being learned and how well this understanding relates to practice. Rather, it seems more likely that most IS researchers in following this approach are sticking to what's familiar, consequently stifling opportunity for producing novel knowledge (Grover & Lyytinen, 2015). Grover and Lyytinen (2015) call for challenges to this accepted approach to knowledge production in IS and in common with Gregor (2014) suggest more data-driven inquiry or more bold theorizing. Hassan and Lowry (2015) suggest that middle-range theorizing offers a way to address these concerns. In contrast to grand theories and the problems that emerge through mid-range theorizing, middle-range theories are bounded by their subject matter and differentiated by specialisation rather than philosophy. The focus of middle-range theorists is on the usefulness of the theory in practice (Hassan & Lowry, 2015). Thus middle-range theories are described as being abstract enough to allow for generalization, yet close enough to practice to allow for empirical validation. Furthermore, middle-range theorizing often yields concepts and findings suitable for further theory building and testing, and they tend to emphasize the creativity and ingenuity of the researcher rather than an emphasis on the research method (Hassan & Lowry, 2015).

3.3 The Requirements of Interpretive Theory

Theory used and produced in research conducted from an interpretive stance such as this study, must address the principles that underlie an interpretive philosophy. Key among these is the interpretation

of understanding. The need for interpretation in interpretive studies introduces specific requirements that interpretive theory should satisfy (Lee & Hovorka, 2015). For instance, the subjective meaning in text or in the actions of actors in social engagements provides a significant foundation for the constructs that emerge in the social sciences (Lee & Hovorka, 2015). This meaning, or understanding, needs to be interpreted. The meaning intended by the authors of texts or the actors in social interaction may be construed differently by readers of the text or observers of the action. Thus subjective meaning is formed by both the intentions of the originators of text or action, but also by changed and changing meanings construed by later readers and observers (Lee & Hovorka, 2015). An explicit recognition of the understanding held by participants in a research study, as well as the understanding held by the researcher can therefore contribute to the strength of interpretive theorizing (Lee & Hovorka, 2015).

The factors situating text or action are powerful influences on how the meaning is interpreted. Thus context is an important consideration in interpretive studies, both the explicit and instrumental factors in the immediate situation, but also implicit factors like beliefs and norms that guide understanding and behavior. Interpretive theory is thus required to account for both the observed and the unobserved (Lee & Hovorka, 2015). Lee and Hovorka (2015) provide principles to strengthen interpretive theorizing and against which interpretive theory can be validated; these provide the guidelines for the inductive theorizing that emerges in this research study. These principles are described in Table 5. In summary, they represent the integration of '... *subjective meanings, social interactions, social structure, and culture* ...' (Lee & Hovorka, 2015:4927).

Requirement	Description
1. Account for the fixation or inscription of meaning.	Describe the subjective meaning ascribed to actors for their actions.
2. Account for the dissociation from the mental intention of the actor.	Account for contrary meaning ascribed to the same action by different actors.
3. Account for the display of nonostensive references.	Describe the influence of implicit contextual factors on the actions of the actors.
4. Account for the universal range of the action's addresses.	Describe the longer term effects of current interpretations.

Table 5. Principles for strengthening interpretive theorizing (Adapted from Lee & Hovorka, 2015)

3.4 The Use of Theory in this Research Study

In interpretive studies theory can be used in three distinct ways; a) to guide the research design and data collection, b) as a basis for comparison during the iterative process of collecting and analyzing data, and c) as the product of the research (Walsham, 2006). Appropriate theories for use are identified on the basis of their relevance to the research topic and data, and on the basis of the researchers' subjective view of the insightfulness of a theory (Walsham, 2006). Importantly, theories can be chosen at different stages of the research project and used in '...*lighter or tighter ways*...' (Walsham, 2006:324). This research study uses existing theory in each of the three distinct ways mentioned. The process followed for the selection of theory for data collection and analysis is illustrated in Figure 11. This section goes on to describe the theories selected and offers justification for the choice of these.

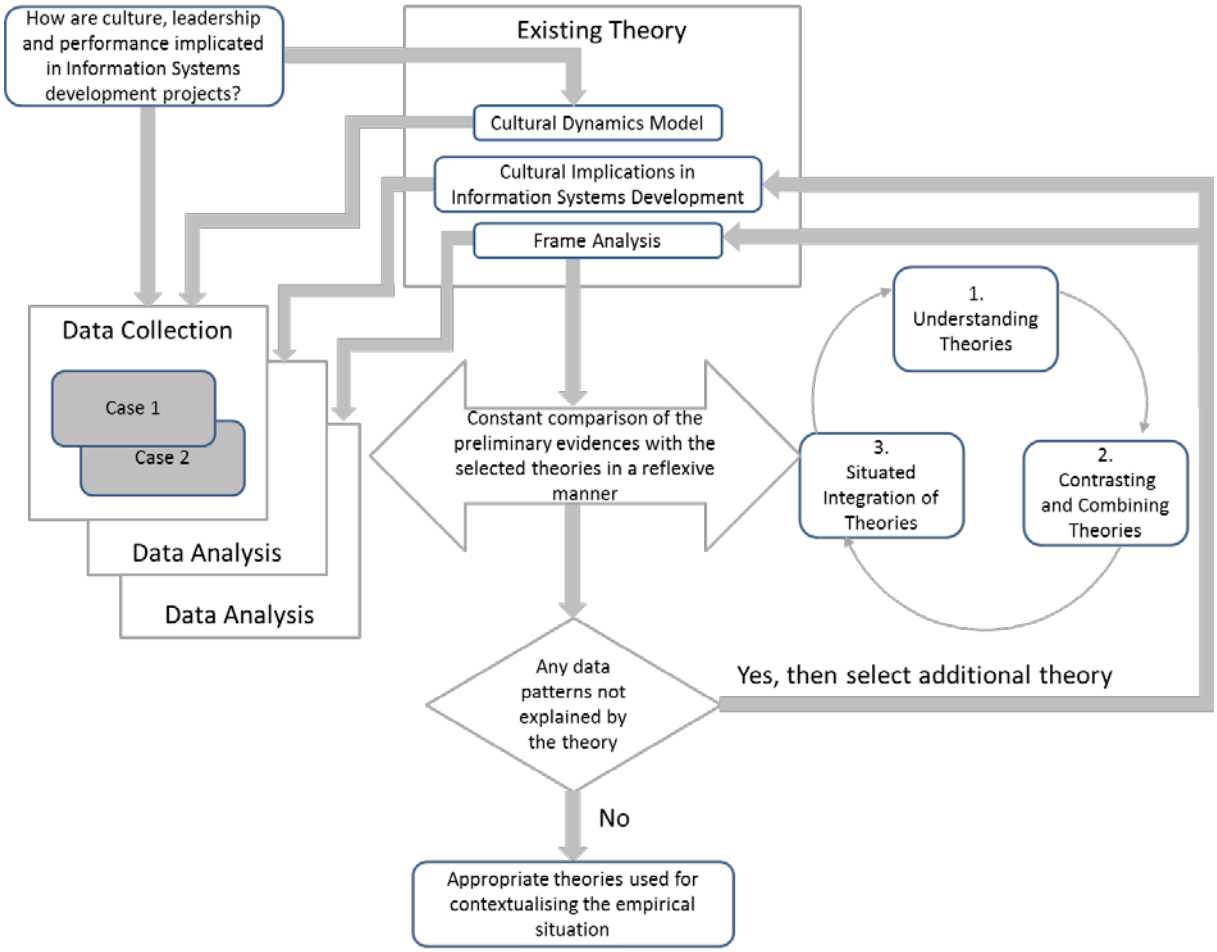


Figure 11. The process followed for selecting theories (Adapted from Ononiwu et al., 2018)

3.4.1 The Cultural Dynamics Model - a Theoretical Foundation for Research Design and Data Collection

Theory is used to inform the research design by providing a theoretical framework that takes into account previous knowledge of the research domain (Walsham, 1995). In literature reviews of the studies of culture and IS published in the leading IS journals, the most popular framework used in IS cultural studies is Hofstede's (1980) national culture dimensions (Leidner & Kayworth, 2006). Hofstede's framework has however been criticized on several fronts; notably, on the implicit assumption in the framework that culture can be equated to national states and for not acknowledging the complexity of culture at multiple levels (Baskerville, 2003). Generally, the tendency to treat culture as monolithic and static is a common feature of IS cultural research (Gallivan & Srite, 2005; Leidner & Kayworth, 2006). A framework able to support a multi-layered and dynamic view of culture was considered more appropriate for this research. Furthermore, consideration was given to concerns regarding an appropriate choice of theory in IS research (Grover & Lyytinen, 2015; Hassan & Lowry, 2015). The Cultural Dynamics Model (CDM), proposed in 1993 as a model for studying organizational culture (Hatch, 1993) was the choice of sensitizing lens for the research design. The CDM can be considered a middle-range theory (Hassan & Lowry, 2015) allowing avoidance of problems associated with the use of grand theories in IS research (Grover & Lyytinen, 2015).

Furthermore, the CDM addresses the key concerns already mentioned in IS cultural studies, and accommodates the multi-layered and dynamic nature of organizational culture.

The CDM draws from the work of Schein (1985) who was largely responsible for the broadly accepted idea that culture manifests at three different levels (Schneider *et al.*, 2013); assumptions, values and artifacts (see Figure 12).

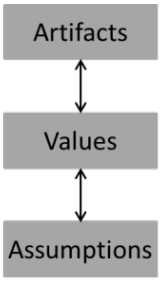


Figure 12. Schein's model of culture (Adapted from Schein, 1985)

Assumptions are described as the most cerebral level of culture (Harris, 1998). They are the partly non-conscious, taken for granted beliefs and premises about reality and human nature upon which the more explicit system of meanings is built (Alvesson, 2011; Harris, 1998; Hatch, 1993). Beliefs are priorities that have been deeply internalized (Alvesson & Berg, 1992) and are experienced as general expectations that influence perceptions, thoughts, and feelings and create a heightened awareness of particular aspects of life (Hatch, 1993). Assumptions are not always explicitly expressed, they are difficult to see and usually require some reading between the lines (Alvesson, 2011; Schein, 1985). As assumptions are unconscious and non-debatable they can distort data and produce perceptions that support the assumption (Hatch, 1993). Cultural assumptions then are the general expectations experienced by individuals that form the basis for possible responses to situations (Hatch, 1993). They underlie the reason why individuals react to some aspects of reality more so than others (Hatch, 1993). Assumptions can be changed in much the same manner in which they were originally created. If new beliefs are introduced to a group, and these repeatedly produce successful results, over time they become taken for granted and part of the group's core assumptions (Hatch, 1993).

Values represent the next level of culture described by Schein (1985). Values emerge from philosophies, goals and standards considered worthy by individuals and groups (Hatch, 1993; Schein, 2010), and these subsequently influence cognition, attitude, and behavior (Straub *et al.*, 2002). Groups develop unique value subsets by assuming the values that experience and learning have shown to be more important than others (Bourne & Jenkins, 2013). These value subsets are stable and enduring, but also subject to change over time. Values may be characterized as a) espoused; values sanctioned by top management through written or spoken words or phrases and formal documents, b) aspirational; the values group members believe the group ought to have, what should be, c) shared; the aggregated values shared by a group and d) attributed; the values group members generally regard as representative of their group, collectively agreed, established and accepted, but not necessarily shared (Bourne & Jenkins, 2013).

Artifacts are the most physical creations of culture (Harris, 1998). They occupy the highest level of Schein's (1985) model and represent the realization of expectations and values in visible, tangible or audible form (Hatch, 1993; Schein, 1985; Swidler, 1986). Thus, artifacts are the result of activity, or the activity itself (Alvesson & Berg, 1992; Hatch, 1993; Schein, 1985). Examples include legends, cautionary tales, superstitions, rumors, celebrations, ceremonies, social routines, logos, processes, gestures, games, architecture, furnishing, and writing (Jones, 1996; Martin, 2002). The cultural significance of an artifact can differ; it is most significant to those who produced it, less so to those not involved in its production, and its significance may decline over time (Hatch, 1993). Artifacts are also difficult to interpret as manifestations of culture (Schein, 1985). The representation of expectations and values in artifacts is never perfect; non-cultural influences like idiosyncrasies, local circumstances or genetic influences are also infused in the artifact (Hatch, 1993; Schein, 1991). Thus, artifacts do not unequivocally represent expectations and values (Hatch, 1993). Behavior itself is not a cultural artifact (Batteau, 2000; Hatch, 1993; Schein, 1991). Rather, the artifact is the interpretations and stylized actions of individuals and groups as they respond to particular circumstances and try to make sense of past, present and future action (Batteau, 2000). As regular interaction requires that individuals share sufficient understanding of how to interact to achieve practical goals, culture accounts for the appearance of consensus and differences in social interaction (Goodenough, 1994). The culture is thus cultivated through this interplay of action and sense-making (Batteau, 2000).

Besides drawing on the focal components of Schein's (1985) model of culture, the CDM incorporates additional ideas emerging from a symbolic-interpretive perspective of organizational culture and is extended to include symbols (Hatch, 1993). Individuals use symbols as a means of creating order and clarity in complex situations (Alvesson & Berg, 1992) as meaning in social interactions is only partially verbalized (Alvesson, 2011). Symbols encapsulate beliefs and assumptions and are used to negotiate the creation of a shared orientation to social reality (Alvesson, 2011). Objects, words or statements, actions, events or images can all act as symbols (Alvesson, 2011; Hatch, 1993; Jones, 1996). In a static, physical sense, symbols and artifacts appear indistinguishable (Hatch, 1993). However, symbols are artifacts that have acquired meaning beyond their literal form (Hatch, 1993; Jones, 1996). The additional meaning is supplied by the users of the artifact by creating a link between the artifact and experiences that exist beyond the literal domain (Hatch, 1993; Jones, 1996). In essence, symbols condense a complex set of meanings into one object, intensifying the meaning and creating a need for the symbol to be deciphered (Alvesson, 2011; Hatch, 1993). Any artifact can become more culturally significant through symbolization, but not all will become symbols, and the same symbolism will not exist for all people at all times (Hatch, 1993; Swidler, 1986). Individuals manipulate symbols to create and discover meaning as they produce their social reality and at times symbolic meaning can come to dominate literal meaning (Hatch, 1993). For instance, office size, parking assignments and titles quickly convey an understanding of status to organizational members (Jones, 1996). The symbolic acts as an indicator of what is important in social

interaction, affecting how individuals perceive events and influencing their actions (Jones, 1996). While symbols may be apparent and observable (Alvesson & Berg, 1992), symbolic behavior is subtle, disguising what is important and meaningful beyond what can be heard or seen (Jones, 1996). For instance, insistence on extensive and rigorous application procedures for membership of a group can elevate the value of group membership, both internally and externally (Jones, 1996).

The introduction of symbolic elements into the CDM allows organizational culture to be studied from both a functional and a symbolic perspective (Hatch, 1993). Importantly, the CDM extends Schein's model even further by introducing processes, intended to encapsulate the dynamic nature of organizational culture. The CDM, in effect, shifts the focus of cultural studies from a study of the core elements of organizational culture towards a focus on the relationships between the elements (Hatch, 1993). This is an important contribution, considering the processual nature of IS development work. The presence of both functional and symbolic components in the model further allow for the simultaneous study of activity and reflexivity inherent in organizational culture. Activity is encapsulated in the elements and processes in the top half of the model, while those in the bottom half are concerned with reflexivity (Hatch, 1993). The CDM is represented in Figure 13.

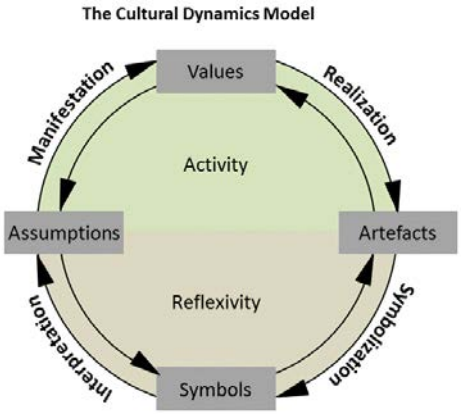


Figure 13. The Cultural Dynamics Model (Adapted from Hatch, 1993).

The four key elements in the CDM, linked by four key processes, together represent the dynamic nature of culture. The four elements in the model, assumptions, values, artifacts and symbols are linked by four processes; manifestation, realization, symbolization and interpretation. Each of these four processes has two components, one responsible for the enactment of culture, the other responsible for reaffirming existing culture or realigning culture to accommodate new elements (Hatch, 1993). The two components in each process thus represent both the stable and the changing nature of culture. The four processes in the model are tightly integrated. None of the processes exist on their own; rather, many instances of these processes continuously occur and re-occur, each providing part of the context in which the others can be understood (Hatch, 1993). The CDM is best conceptualized as two wheels moving in opposite directions, rather than as four separate processes. The two wheels are interconnected; the forward wheel constructs organizational culture while, simultaneously, the backward wheel provides the historical context that

allows organizational members to construct meaning to make sense of their situations. The counteraction of the two wheels allows for an examination of culture as a dynamic process (Hatch, 1993). Particularization of activity based elements of the CDM to the empirical situation is shown in Figure 14. Thus, proactive realization is represented by organizational and project governance activities that produce and use artifacts such as organizational policies or PM methodologies, while retroactive realization reflects the adjustments to organizational and IS development project values that may arise through these same governance activities. Similarly, organizational and IS development project assumptions create expectations during proactive manifestation that give rise to organizational values. Adjustments to organizational and IS development project values may in turn require assumptions to be adjusted through retroactive manifestation.

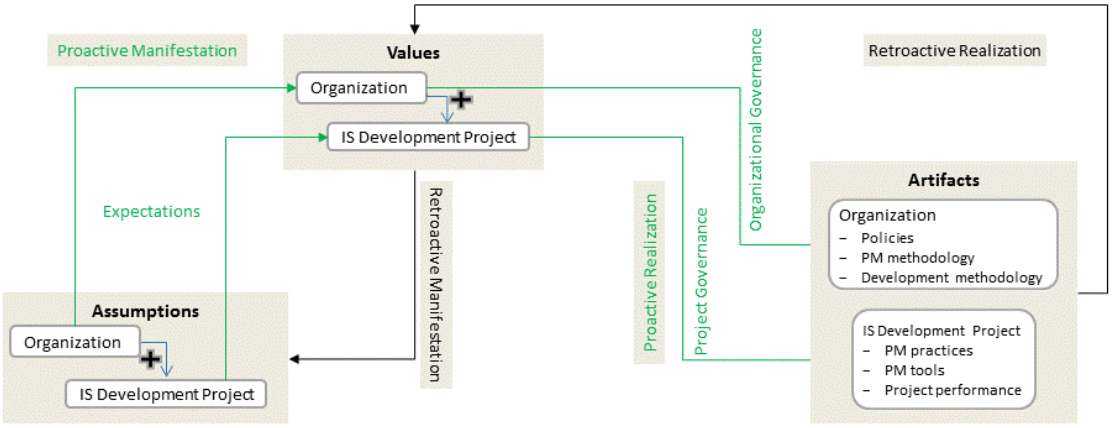


Figure 14. Particularization of the Cultural Dynamics Model to the research study.

A definition of concepts not yet described is offered in the context of this research study as follows:

- Policies; the organizational roles, authorities and accountabilities, together with mechanisms, methods and procedures that control and integrate work (Child, 1972; Müller & Turner, 2007).
- PM Methodology; the practices, techniques, procedures and rules put in place in the organization to guide PM practice (Project Management Institute, 2017b).
- Development methodology; the process by which an information technology is analyzed, designed, implemented, introduced and supported (Korpela *et al.*, 2002).
- PM Practice and PM Tools; identified according to the standards and guidelines as described in the *Guide to the Project Management Body of Knowledge* (Project Management Institute, 2017b), or similar.
- Project Performance; the performing of project practice and the outcome of the performing (Denzin, 2003).

While use of the CDM as a theoretical framework can be found in organizational studies (Boyce *et al.*, 2015; Latta, 2009; Mueller, 2015; Ogbonna & Harris, 2002), only one IS cultural study was uncovered from a search of the common academic literature databases. In this instance, the CDM was used in a study

to identify cultural gaps in the web site design, development, and implementation process in two large organizations (Harris & Ogbonna, 2007). The limited use of CDM in IS could be attributable in part to the predominance of studies of national culture in the discipline (Leidner & Kayworth, 2006) and the tendency in IS culture studies to treat culture as a static phenomenon (Gallivan & Srite, 2005). Despite limited support for CDM in the IS literature, it was nevertheless considered the most appropriate theoretical foundation for the initial stages of the research.

3.4.2 Cultural Implications in Information Systems Development (CIISD) – a Structural Framework for Data Analysis

Interpretive studies need to accommodate a willingness to revise initial assumptions and theories, in order to remain aligned to the field data and to the concepts emerging from the data analysis (Walsham, 1995). Consequently, theories relevant during the initial phases of a research study could be revised, or totally abandoned during data collection and analysis (Walsham, 2006). In this research study, the CDM, used initially as a sensitizing lens for data collection was abandoned in favor of more relevant theory to support the data analysis phase of the research.

The theory of Cultural Implications in Information Systems Development (CIISD) was used as a structural framework for the thematic analysis of the data. The theory emerged from a review of the IS development and culture literature, positioning it as suitably relevant to support analysis of the data from this research. The principle underlying CIISD is that IS development is essentially a form of social interaction, where individuals must work together to attain a set of objectives, some of which are shared. The central focus in the theory is *Processes of Relating*. It encapsulates the sense making and alignment activities involved in the work of IS development and recognizes the simultaneous creation of meaning and materiality that arises through everyday practice. The theory deals with the complications that arise during social interactions from factors that relate to varying cultural frames of reference held by participants in the development process, so-called *Cultural Contradictions.* For instance, issues can arise through different values inherent in national cultures (Zhang *et al.*, 2007; Levina & Vaast, 2008; Gregory *et al.*, 2009; Martinsons *et al.*, 2009; Dysart-Gale *et al.*, 2011; Suri & Abbott, 2013), differences in organizational cultural values (Iivari & Huisman, 2007; Avison & Banks, 2008; Rai *et al.*, 2009; Leonardi, 2011; Suri & Abbott, 2013), from differences in the values embedded in societal or organizational cultures and the values embedded in technology (Barzilai-Nahon & Barzilai, 2005; Barendregt, 2008; Sia *et al.*, 2009; Kaplan, 2011; Waring & Skoumpopoulou, 2012; Koch *et al.*, 2013) and from the degree of fit between technology and existing organizational practices (Boersma & Kingma, 2005; Clemmensen, 2012). These differences thus make a difference to effective interaction during IS development.

Within this context of *Cultural Contradictions* individuals seek to make sense of the differences they encounter, by drawing on cultural resources, past experience and knowledge (Boersma & Kingma, 2005; Levina & Vaast, 2008; Leonardi, 2011). For example, individuals make use of collaboration and interpersonal negotiation (Boersma & Kingma, 2005; Levina & Vaast, 2008; Pan *et al.*, 2008; Dysart-Gale *et*

al., 2011; Kaplan, 2011) in attempts to establish a strongly shared vision or common goal. Communication and trust are both important in the sensemaking activities (Avison & Banks, 2008; Rai *et al.*, 2009; Sia *et al.*, 2009; Lowry *et al.*, 2010; Clemmensen, 2012). Attempts at making sense prompt individuals to undertake activities to align their differences. For instance, IS systems may be modified to support user values (Koch *et al.*, 2013), changes may be made to organizational policy (Rai *et al.*, 2009; Koch *et al.*, 2013) or to existing organizational practices (Levina & Vaast, 2008). During IS development, the simultaneous creation of meaning and materiality through everyday practice is recognised. For instance, technology is positioned as an actor in organizational practice (Zhang *et al.*, 2007; Lowry *et al.*, 2010; Kaplan, 2011), with symbolic value (Barendregt, 2008; Goggin, 2008; Dysart-Gale *et al.*, 2011; Leonardi, 2011), while technology may be adapted to suit the culture or vice versa (Barzilai-Nahon & Barzilai, 2005; Koch *et al.*, 2013).

These *Processes of Relating* produce a new *Coordinated Culture* that has some vestiges and varieties of the old cultures and some completely new elements. These elements include things like organisational structures, tasks, working practices, individual behavior, roles, skills and power bases (Boersma & Kingma, 2005; Barzilai-Nahon & Barzilai, 2005; Levina & Vaast, 2008; Pan *et al.*, 2008; Barendregt, 2008; Gregory *et al.*, 2009; Waring & Skoumpopoulou, 2012; Koch *et al.*, 2013; Suri & Abbott, 2013). The *Coordinated Culture*, only achievable through targeted effort (Boersma & Kingma, 2005; Levina & Vaast, 2008; Koch *et al.*, 2013), is characterized by high levels of trust, shared understanding and effective conflict resolution (Gregory *et al.*, 2009). Finally, the theory incorporates a view of the IS development context as dynamic and ever changing; efforts to align disparate views and values may cause new differences to become salient, creating the need for further efforts at sense making and alignment. This state is punctuated periodically with the achievement of a *Coordinated Culture.*

3.4.3 Frame Analysis - a Theoretical Foundation for Data Analysis and Theory Building

During the initial data analysis particularly compelling phenomena in the data were revealed, such as the importance afforded to relationships and the multiple perspectives on situations arising during IS development. Consequently, theory addressing social interaction and sensemaking was considered most appropriate as a theoretical foundation for further data analysis and theory building. Additionally, categorization as a middle-range theory (Hassan & Lowry, 2015) and ability to support the interpretation fundamental to interpretive theorizing were important criteria in the choice of theory. Frame analysis (Goffman, 1974) meets both these criteria and was therefore considered an appropriate choice as foundational theory for this stage of the research study.

Frame analysis provides a means of analyzing the meaning and understanding different social groups afford to different phenomena encountered in social interaction (Hsu, 2009). Frame analysis takes the position that individuals perceive reality on the basis of personal interpretation and that the meaning they construct occurs in the context of existing knowledge and the prevailing situation (Goffman, 1974). The perspective afforded to the construction of meaning in frame analysis is well aligned with the interpretive stance adopted in this research study. Interpretive researchers see social processes as

encapsulating the meanings, beliefs and intentions of people, while the actions of people within the process produce the facts that they understand as their reality (Berger & Luckman, 1966; Klein & Myers, 1999; Orlikowski & Baroudi, 1991). Reality is thus subjective, originating from human thought and action, and reinforced and maintained through social interaction (Berger & Luckman, 1966).

Frame analysis involves the selection by individuals of particular aspects of reality, such that these aspects become more salient in the individual's efforts to interpret what is going on (Goffman, 1974). Frames therefore serve as "*schemata of interpretation*" (Goffman, 1974:21) or sense-making devices that enable individuals to recognize and label the behavior and events that occur in their lives. In this way, frames provide a connection between individual psychological factors and critical elements in the contextual environment (Benford & Snow, 2000). By reconciling current knowledge with new information presented in novel situations, individuals derive meaning and develop an understanding of their world (Hsu, 2009). By simplifying the world and shaping appropriate inferences, frames influence interpretations, which in turn sway actions and outcomes (Giorgi *et al.*, 2015). In this way, frames provide a knowledge structure that enables individuals to interpret and leverage their experience (Su, 2015). Thus situations are defined based on what is included in the frame and what is not included (Goffman, 1974).

While frames are held independently by individuals as cognitive structures (Goffman, 1974), they can also be shared among social groups who share the same assumptions and beliefs of certain phenomena (Hsu, 2009). The effectiveness of a frame in influencing behavior depends on how well it resonates (Benford & Snow, 2000) with the cultural context, personal experiences and relevant concerns of a social group (Babb, 1996). As frames shape action by directing the attention of individuals to particular aspects of their environment, these aspects become more meaningful than others, increasing their influential power over ensuing behavior (Leonardi, 2011). Su (2015) showed how cultural frames solidified and gained significance through repeated alignment and realignment of knowledge and context during organizational interactions. In this way, frames effectively became a source of knowledge for subsequent sense-making activities (Su, 2015). Besides the simpler frames that serve to label situations as for example a joke, a game, a fight (Goffman, 1974), more complex frames offer broader interpretations of situations, incorporating elements of problems, solutions, and motivations (Benford & Snow, 2000).

Frames are dynamic in both structure and content, with a relevance that varies across context and time (Davidson, 2006; Lin & Silva, 2005). They emerge and evolve in an iterative process that involves enactment, alignment and retention of the frame (Su, 2015). Frame structure, or domains of knowledge (Orlikowski & Gash, 1994), can be applied in a variety of different situations (Davidson, 2006). Frame content however always relates to a specific context (Davidson, 2006). Individuals may use the same frame in different situations, but contextual elements in the situation will shape interpretation, leading to a different understanding and consequently, different actions (Hsu, 2009). Furthermore, groups may share a framing of the same phenomena in ways that differ from each other. The meaning assigned to contextual

factors may differ between groups, causing a different interpretation of the situation and different actions (Hsu, 2009). Importantly, individuals develop a portfolio of frames in a knowledge domain, allowing them to adopt different perspectives to make sense of diverse situations (Su, 2015). For instance, in an outsourcing arrangement with offshore clients, individuals developed multiple cultural frames to make sense of interactions with culturally diverse clients (Su, 2015). Similarly, it was shown that individuals adopt different cultural frames at home and in the workplace to guide their actions (Zolfaghari *et al.*, 2016).

As framing is an active phenomenon, it implies agency from the parties involved and therefore the possibility of contention (Benford & Snow, 2000). As individuals draw on their education, work experiences or social interactions (Orlikowski & Gash, 1994), differences in framing could result (Chreim, 2006). Consequently, while individuals and social groups in an organization may all have access to the same set of resources with which to frame a situation, the resources selected for particular frames by different groups may result in different actions (Leonardi, 2011). By broadening their source of framing resources, individuals might also resist frames constructed from more localized contexts (Chreim, 2006). Additionally, different frames of reference held by individuals or groups can also infuse situations with contradictory meanings (Ravishankar, 2015). While framing differences can cause uncertainty and conflict in IS initiatives (Hsu, 2009; Leonardi, 2011; Lin & Silva, 2005), a lack of frame alignment between social groups is not necessarily problematic. For instance, effective frame structures may differ at different stages in an IS development undertaking, when diverse stakeholders adopt frame structures suitable to desired organizational outcomes at a particular point in time (Davidson, 2006). Frames can also facilitate or constrain the actions of individuals and group. Frames have a beneficial effect when they provide a means to interpret ambiguous situations, reduce uncertainty and provide a basis for taking action (Orlikowski & Gash, 1994). Frames can also constrain individuals and groups, by tolerating a lack of reflexivity on existing behaviors and distorting new information to fit existing frames (Orlikowski & Gash, 1994).

Frames have become a foundational concept in sociology (Su, 2015) and since the concept of technological frames was proposed as a basis for understanding technological development, use, and change in organizations (Orlikowski & Gash, 1994), frame analysis has been used in as an analytical lens in a variety of IS research studies. For instance, frame analysis has been used:

- to explore the social and political processes that occurred during the adoption of an IS (Lin & Silva, 2005),
- to investigate how organizational members made sense of IS security certification and how this sense-making influenced their actions (Hsu, 2009),
- to explain why members of different organizational sub-units fail to share a common vision for a new technology and the consequences of this failure (Leonardi, 2011),
- to explore how cultural beliefs are invoked and mobilized to reconcile frame disputes (Ravishankar, 2015),

- and in the development of '*cultural frames*' to describe the knowledge structures used to guide collaborative interactions with diverse clients in the context of global IT outsourcing (Su, 2015).

Frames can be used as a mechanism to assess the degree of interpretive alignment between social groups regarding specific phenomena. Social groups that exhibit frame alignment would be expected to share similar sets of values and beliefs, leading to congruent and complementary behavior (Chreim, 2006). Frame analysis thus offers an avenue to gain a better understanding of how phenomena become embedded in organizational work practices (Hsu, 2009).

4 RESEARCH METHODOLOGY

This chapter is organized as three main sections. The first two sections include a critical discussion of the ontological and epistemological factors governing research design that are pertinent to this research study. An interpretive approach to the research with a hermeneutic mode of inquiry is argued as most relevant in view of the research topic and research questions. The case study is suggested as an appropriate investigative method within this paradigm and the various sources of data that can be considered for data collection within this method are described. Thematic analysis is positioned as an appropriate technique for data analysis. Argument concerning the generation of theory from the case study method is also presented.

The third section describes the research approach used in this study. It includes further detail concerning the case study design, how the participating organization and projects were selected, and the argument for including managerial and non-managerial participants in the study. It also describes how data was collected and analyzed. The section is concluded with discussion of other factors considered in the research study, such as the personal perspectives of the researcher and participants, the use of software tools, and the attention paid to ethical concerns, like confidentiality and privacy.

4.1 Research Paradigm

There are different views on how to classify research. These differences are important as classification frameworks serve to orientate research and provide a basis for discussion or conflict (Myers & Klein, 2011). For instance, different underlying assumptions and research methodologies associated with different paradigms explains the exploration of social phenomena from diverse perspectives, the use of dissimilar methods and the evaluation of research contributions on the basis of different criteria (Orlikowski & Baroudi, 1991). Within the information systems (IS) discipline, the classification scheme proposed by Orlikowski and Baroudi (1991) has been widely accepted (Myers & Klein, 2011). They proposed three research paradigms for the investigation of IS phenomena; positivist, interpretive, and critical. More recently, critical realism has emerged as a viable philosophical paradigm for IS research (Wynn Jr & Williams, 2012). Each paradigm contains sets of beliefs regarding a) the object of study, b) the notion of knowledge and c) the relationship between knowledge and the empirical world.

Positivism remains the dominant paradigm in IS research (Dubé & Paré, 2003; Orlikowski & Baroudi, 1991). The aim of positivist studies is to discover the universal laws governing phenomena (Lee & Baskerville, 2003). Studies are premised on *a priori* fixed relationships between phenomena and seek to increase predictive understanding of these by testing theory (Orlikowski & Baroudi, 1991). Researchers working in this paradigm believe in the independence of the researcher and the object of inquiry and that scientific concepts have fixed, unequivocal meanings. Thus, constructs in a researchers' model are considered to correspond on a one-to-one basis with objects or events in the real world (Orlikowski & Baroudi, 1991). Relationships between phenomena are believed to exist and can be identified and tested, leading to one description of the chosen aspect of the phenomena. Positivism also makes a distinction between values and facts in knowledge claims, and takes the position that scientific knowledge can only

consist of facts (Walsham, 1995). Positivist studies show evidence of formal propositions, measurement tools, the testing of hypothesis and the drawing of inferences from samples to stated populations (Orlikowski & Baroudi, 1991). While positivist studies are well suited to natural science studies, some commentators consider the principles underlying positivist research as problematic for the study of social phenomena (Orlikowski & Baroudi, 1991).

In contrast to the positivist tradition, researchers working in the interpretive paradigm do not strive to generate 'truth' or social laws (Walsham, 1995). As humans form an integral part of groups or social systems, interpretive researchers believe social phenomena can't be identified, described and measured in objective or universal ways (Orlikowski & Baroudi, 1991). Instead, these researchers seek meaning in context and look to understand lived experience from the perspective of those involved (Gregor, 2006; Klein & Myers, 1999). Members of society enact their realities through participation in social processes, and their meanings, intentions and beliefs are constituted in their social acts (Orlikowski & Baroudi, 1991). Knowledge of reality develops through social constructions, like language, documents and tools, and the situation specific meanings that arise during social interaction (Gregor, 2006; Klein & Myers, 1999). Thus, multiple realities are possible (Gregor, 2006). Interpretive studies therefore reject the possibility of an objective account of social phenomena, and instead seek a relativistic and shared understanding by accessing the meanings participants assign to events and situations (Orlikowski & Baroudi, 1991). Research conducted in this paradigm can produce deep insight into social phenomena (Klein & Myers, 1999).

Critical research is an emergent stream in IS research concerned with social issues like freedom, power and values that play a role in the development, use and impact of IS (Myers & Klein, 2011). The main task of critical research is to provide social critique that brings to light conditions of the status quo creating alienating and restricting circumstances in social systems. Rather than simply predict or explain the status quo, critical research aims to change it (Orlikowski & Baroudi, 1991). This research approach is premised on the assumption that people can change their social and economic conditions through conscious action, while also recognizing the social, cultural and political constraints and limitations like natural laws on their behavior (Klein & Myers, 1999). Thus critical researchers first develop a broad and insightful understanding of the status quo, before adopting a critical stance on the normative basis justifying the current situation, and then providing knowledge and practical understanding to enable alternative responses (Myers & Klein, 2011). This is indicative of the evaluative dimension of critical research, an important distinction in this philosophy that sets it apart from the positivist and interpretivist paradigms (Orlikowski & Baroudi, 1991).

Critical realism (CR) has recently emerged as an alternative to interpretivism or positivism for conducting IS research (Wynn Jr & Williams, 2012). Assumptions of a stratified ontology consisting of the real, the actual and the empirical domains set CR apart from positivism and interpretivism (Wynn Jr & Williams, 2012). The domain of the real contains independently existing entities and structures with inherent causal powers. The actual domain contains observed or unobserved events that result from

structures and entities in the real domain enacting their causal powers. The empirical domain consists of those events actually witnessed by humans. Researchers working in the CR paradigm use knowledge of particular situations to infer what structures and mechanisms must exist in the situation being studied to account for accepted outcomes (Wynn Jr & Williams, 2012). Importantly, proponents of CR claim its suitability for developing in-depth causal explanations of complex phenomena in terms of interpretations by the actors in events and the interaction of independent structures and mechanisms that constrain or enable specific outcomes (Wynn Jr & Williams, 2012). Thus, a primary objective of CR research is the provision of clear and empirically supported causal statements regarding how and why phenomena occurred, offering the possibility for IS researchers to create generalizable explanatory theories.

The research topic and questions of this research study seek to deepen understanding of the interplay of culture, leadership and performance in IS development teams, while acknowledging the dynamic, nuanced and complex nature of these concepts. Thus, an understanding of the social context and the situated meanings that arise through social interaction are necessary conditions to effectively explore this research topic. Consequently, of the research paradigms considered suitable for the investigation of IS phenomena (Orlikowski & Baroudi, 1991), the interpretive paradigm is considered best suited to this research study.

4.2 Research Design

The challenge of interpreting understanding in interpretive studies can be addressed through hermeneutic inquiry and the fundamental principle of the hermeneutic circle (Lee & Hovorka, 2015). The hermeneutic circle postulates that meaning emerges through a constant movement of contemplation, from scrutiny of the whole to scrutiny of its parts and back again (Gadamer, 2004). Each circle leads to potentially different understandings, providing a new occasion to validate the existing interpretation (Lee & Hovorka, 2015). Understanding is achieved when the understanding of each part is in harmony with the understanding of the whole. The requirements for interpretation are thus a fundamental consideration in the design of an interpretive research study. Additionally, Klein and Myers (1999) have proposed principles for interpretive field studies that embed interpretive insights into interpretive research; these principles are grounded in '*The Fundamental Principle of the Hermeneutic Circle*' (Klein & Myers, 1999:72).

4.2.1 Research Method

A range of research methods are appropriate for interpretive research, including case studies, ethnography, grounded theory methodology and action research (Denzin & Lincoln, 2000). The choice of the most appropriate method should depend primarily on the question to be answered by the research (Ulrich, 2001). The case study method has been selected as appropriate for this research study. This method is an accepted research method within the IS community (Dubé & Paré, 2003; Klein & Myers, 1999) and can be used to both test and generate theory (Eisenhardt, 1989). As a research method, the case study allows a focus on understanding the dynamics in empirical settings (Eisenhardt, 1989) and is often the method of choice in interpretive studies where researchers seek answers to 'how?' and 'why?' questions

(Walsham, 1995; Yin, 2009). Case studies are also suited to the in-depth study of human behavior, and to the study of phenomena that are difficult to isolate from their context (Dubé & Paré, 2003; Ulrich, 2001; Yin, 2009). The opportunity for face-to-face interaction in the case study method provides the researcher with the best circumstances for experiencing the lived experiences of practitioners and satisfies the requirement that the researcher participate in social processes to truly understand them (Orlikowski & Baroudi, 1991). Rich empirical data is a particular strength of the method (Keutel *et al.*, 2014) allowing readers to learn vicariously by determining what can and can't apply in their particular context, and to reconstruct knowledge in a manner that makes it personally useful (Stake, 2005). This feature is particularly relevant in the context of this research, considering the unique nature of each IS development project (Project Management Institute, 2017b) and the complexity of the concepts to be explored (Leidner & Kayworth, 2006).

4.2.2 Research Population and Case Selection

It is important in case studies to specify the population from which the research samples will be drawn, to clarify the domain in which the research findings have relevance (Eisenhardt, 1989). In inductive case studies, samples are usually selected from the population using theoretical sampling techniques; cases are selected to satisfy theoretical rather than statistical reasons (Eisenhardt, 1989; Flyvbjerg, 2006). Hence, a case may be chosen based on a match with other cases, or the degree of fit with theoretical categories, the goal being to choose cases likely to contribute to the replication or extension of theory (Eisenhardt, 1989; Flyvbjerg, 2006; Yin, 2009). Case studies can include single or multiple cases (Yin, 2009). It is suggested that inductive studies with fewer than four cases may struggle to substantiate the empirical grounding of new theory (Eisenhardt, 1989). However, the number of cases in a research study is often determined by time and money constraints (Eisenhardt, 1989; Yin, 2009). Additionally, most interpretive multiple case studies in IS research consist of two cases (Keutel *et al.*, 2014). Case studies can also include multiple embedded units of analysis within a single case (Yin, 2009). In this case study design, the case remains the object of inquiry, while the embedded units serve to enrich understanding of the case (Yin, 2009).

4.2.3 Data Collection

It is typical for a combination of data collection methods to be used in case studies. The primary source of data to an observer (rather than participant observer) in case studies are interviews (Walsham, 1995). These are usually supplemented with observations, questionnaires and archival material (Eisenhardt, 1989; Yin, 2009). The use of multiple sources of data facilitates triangulation of the data and a stronger substantiation of research findings (Eisenhardt, 1989).

The case study method allows the overlapping of data collection with data analysis, providing opportunity to adjust data collection instruments or identify additional sources of data for future data collection efforts (Miles *et al.*, 2014; Yin, 2009). This introduces flexibility into the collection of data (Klein & Myers, 1999; Miles *et al.*, 2014) allowing emergent themes in the data to be pursued (Eisenhardt, 1989)

and allowing reflexivity on the findings in the context of the bigger picture. Field notes provide a means of managing the overlap of data collection and data analysis activities h (Eisenhardt, 1989). The notes allow the researcher to preserve the contextual elements of the case for future review while further facilitating reflective thinking on what is being observed (Eisenhardt, 1989). Data collection can be terminated once the researcher recognizes that minimal incremental learning is occurring in respect of observed phenomena (Glaser & Strauss, 1967).

4.2.4 Data Analysis

4.2.4.1 Thematic Analysis

Looking for patterns in qualitative data is a shared technique across most qualitative analysis methods (Boyatzis, 1998; Braun & Clarke, 2006). Thematic analysis (TA) in common with most qualitative data analysis strategies thus involves a search for recurring patterns or features in the data (Braun *et al.*, 2015). Unlike other qualitative methodologies, TA does not provide a theoretically informed framework for data analysis; it is just a method or a technique (Braun *et al.*, 2015). This allows flexibility in the research design regarding data collection methods, the choice of theoretical framework to guide analysis and the form of TA that will be used (Braun *et al.*, 2015). As a minimum, TA organizes and describes data in rich detail; importantly, TA extends beyond description and allows for the interpretation of aspects of a research topic (Braun & Clarke, 2006). A TA generally focuses on either an explicit or an interpretive level of data (Braun & Clarke, 2006). An analysis focusing on the explicit or '*semantic*' level will identify patterns in the data from surface meanings, while an interpretive or '*latent*' level of analysis goes beyond semantic content and identifies underlying assumptions and ideas (Braun & Clarke, 2006). Thus latent level TA requires interpretive work to develop themes from the data and the resulting analysis is already theorized (Braun & Clarke, 2006; Miles *et al.*, 2014).

The elements of a TA include data extracts, initial codes, sub-themes and themes. Data extracts represent individual chunks of data in the data set that have relevance in the context of the research study (Braun & Clarke, 2006; Miles *et al.*, 2014). Initial codes are the labels attached to the data extracts that assign meaning to the data. This process of assigning meaning requires deep reflection and interpretation of the data (Braun & Clarke, 2006; Miles *et al.*, 2014). These codes can go on to become themes if they represent clusters of meaning, but they can also be combined into other codes or discarded altogether. Themes emerge from a central organizing concept and illustrate how this concept plays out in the data (Braun *et al.*, 2015; Miles *et al.*, 2014). The prevalence of a theme in the data does not necessarily indicate the importance of the theme. Rather, the theme should capture an important consideration in relation to the research question (Braun & Clarke, 2006). Sub-themes are themes within a theme; they assist in enriching the detail of a theme while decomposing large or complex themes into a hierarchy of meaning (Braun & Clarke, 2006; Miles *et al.*, 2014). These elements of a TA are illustrated in Figure 15.

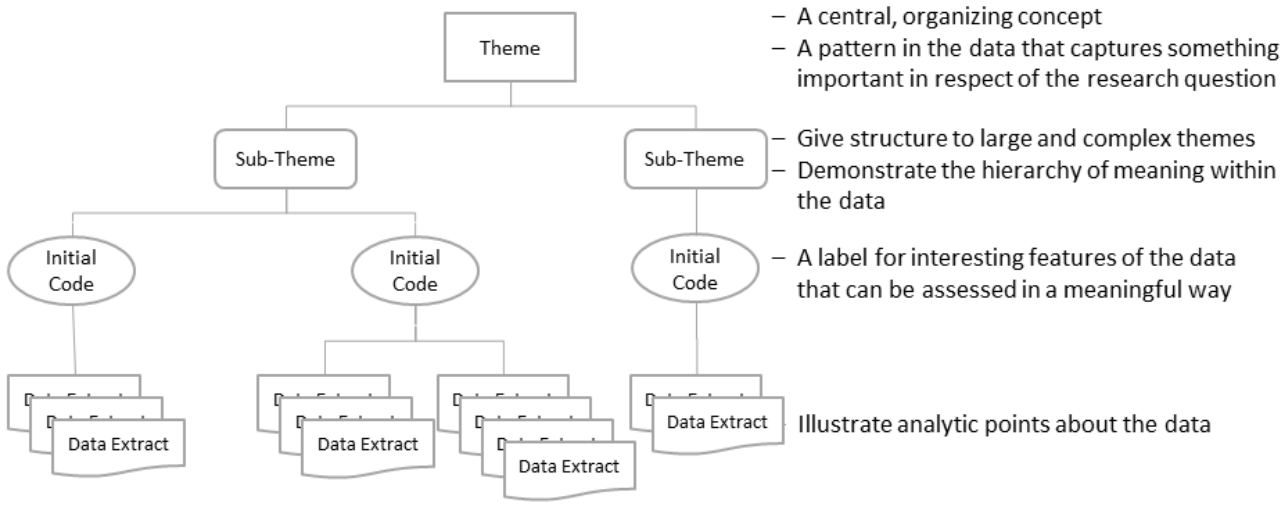


Figure 15. Elements in a thematic analysis (Adapted from Braun & Clarke, 2006; Miles *et al.*, 2014)

A TA involves a constant movement of scrutiny between an entire data set, the extracts of data being analyzed and the emergent results of this analysis (Braun & Clarke, 2006). Themes are revisited to check their distinctiveness or possible alignment with other themes in the data set or with concepts from related theory, through a process of constant comparison. The iterative analysis of data and the process of constant comparison produce the emergent theory (Braun *et al.*, 2015; Corbin & Strauss, 2015). Thus while the phases in the TA process are represented in a sequential fashion in Table 6, TA is not a linear process; recursive revisiting of the phases is common (Braun *et al.*, 2015). In this respect, TA is well suited to hermeneutic inquiry.

Phase	Description
1 Familiarization with the data	R*eading and re-reading the data.*
2 Coding	*Generating succinct labels that identify important features of the data relevant to answering the research question; after coding the entire data set, collating codes and relevant data extracts.*
3 Searching for themes	**E***xamining the codes and collated data to identify significant broader patterns of meaning; collating data relevant to each candidate theme.*
4 Reviewing themes	*Checking the candidate themes against the data set, to determine that they tell a convincing story that answers the research question. Themes may be refined, split, combined, or discarded.*
5 Defining and naming themes	*Developing a detailed analysis of each theme; choosing an informative name for each theme.*
6 Writing up	*Weaving together the analytic narrative and data extracts; contextualizing the analysis in relation to existing literature.*

Table 6. The phases in thematic analysis (Braun *et al.*, 2015: 188-189).

4.2.4.2 Within-case and Cross-case Analysis

Multiple case studies can involve two stages in the analysis of data. The first stage is a within-case analysis of the data. The primary goal of a within-case analysis is to describe and explain what has been discovered within a single case (Miles *et al.*, 2014). This step in the analysis process involves a detailed write-up of the case, which is usually largely descriptive. These write-ups contribute to the analysis process

in two ways; firstly as a means of coping with the volume of data and secondly in the generation of insight (Eisenhardt, 1989). Importantly, a within-case analysis fosters rich familiarity with the data and the unique themes within the case (Eisenhardt, 1989). The second stage of the data analysis process involves a comparison of cases, a cross-case analysis. A cross-case analysis can be case-oriented or variable-oriented (Miles *et al.*, 2014). A case-oriented analysis considers the case as a whole, and then looks for similarities and differences between the outcomes of each case (Miles *et al.*, 2014). This cross-case approach is useful to examine cases selected using a replication strategy (Yin, 2009). In contrast, a variable-oriented cross-case analysis involves a search for patterns across cases in a multiple case study. The details of each case are less important than the broad categories shared across a variety of cases (Miles *et al.*, 2014). The two strategies can be combined into a mixed strategy (Miles *et al.*, 2014). The use of various cross-case techniques and diverse perspectives on the data can reveal previously unanticipated findings (Eisenhardt, 1989). This process of comparison helps to mitigate information processing biases that can result in premature or false conclusions (Eisenhardt, 1989), and allows for a single set of conclusions to be drawn across multiple cases (Yin, 2009).

4.2.5 Generating Theory from Case Studies

The case study as a scientific method is challenged in some quarters because of misunderstandings in conventional wisdom related to theory, reliability and method in research (Flyvbjerg, 2006). Flyvbjerg (2006) argues that detractors of the case study method fail to appreciate the value of context dependent knowledge, the only type of knowledge that exists in the study of human affairs. Case studies produce context dependent knowledge through a closeness to real-life situations and a rich description of these (Eisenhardt, 1989; Flyvbjerg, 2006; Keutel *et al.*, 2014) allowing knowledge to be constructed in a manner that makes it personally useful (Stake, 2005). Both these criteria are necessary to build a nuanced view of reality (Flyvbjerg, 2006). In the absence of the probability of predictive theories or general context-independent theory in social science, context-dependent knowledge is valuable, and case studies are well suited to produce this (Flyvbjerg, 2006). Furthermore, users of the method can strive to produce theory that is generalizable within the case setting and generalizable from the descriptive idiographic detail to concepts and theory (Klein & Myers, 1999; Lee & Baskerville, 2003).

4.3 Research Approach

The requirements of hermeneutic inquiry are a fundamental consideration in the approach used in this research. In this study the '*parts*' and the '*whole*' are "*… given a broad and liberal interpretation*." (Klein & Myers, 1999: 71); the '*whole*' is the cases in this study, their historical and current context and the meaning that emerges as a result of interaction, between research participants as they go about the business of IS development, and between researcher and the research participants. The experience, knowledge and pre-understanding of these individuals, within the case context and outside of this, represent the '*parts*' in this research.

4.3.1 Case Selection

The organization participating in this research was purposefully selected from a list of organizations in the financial services industry in South Africa. The financial services industry was chosen as the researcher has extensive practical experience in information systems in the financial services sector. Besides being familiar with the systems in use in organizations in this sector, past business connections were considered a possible avenue to gain entry into an organization. An email was sent to the Chief Information Officer in 17 organizations on the list, requesting their participation in the research project. Interviews were held with representatives from 5 organizations to discuss the requirements of the research in more detail. One organization agreed to participate.

4.3.2 Case Study Design

This research uses a multiple case study design, consisting of two cases. A multiple case design with only two cases is aligned with most interpretive multiple case study designs in IS (Keutel *et al.*, 2014), and allows maximization of the learning opportunities in the time available (Dubé & Paré, 2003). Two projects from within the participating organization represent the cases in this study (see Figure 16). The selection of the two projects followed theoretical replication logic, allowing for the comparison of two cases in similar circumstances and the expectation of contrasting results (Keutel *et al.*, 2014). The manager of the project portfolio in the participating organization nominated two projects; one project maintaining or improving performance against measures of time, cost and quality (labelled a 'Healthy' project) and another (labelled a 'Challenged' project) which showed deteriorating performance against the same measures. While acknowledging the subjective nature of the selection criteria, the choices nevertheless represent the view of an individual with an overarching perspective of the organization's project portfolio.

Project Performance	
Challenged	CASE 1
Healthy	CASE 2

Figure 16. Multiple case study design

The two cases were subsequently given pseudonyms to ease the researchers association with the data during analysis and writing up of the findings; Case 1 was renamed Kindle and Case 2 was renamed Blend. The two cases are referred to by these pseudonyms in the sections and chapters that follow.

4.3.3 Research Participants

Research suggests that examining culture from multiple perspectives provides broader insight, aiding the understanding of complex cultural situations (Harris & Ogbonna, 1998; Kappos & Rivard, 2008; Martin, 1992). The research topic is therefore explored from a top-down and a bottom-up perspective; views are gathered from managers as well as organizational members in non-managerial roles. Key participants for each case were selected based on this need for multiple perspectives on the data (Alvesson & Sköldberg, 2009; Lee & Hovorka, 2015) and practical limitations, such as time constraints on the researcher.

A *Confidentiality and Consent Form* was sent to 26 prospective participants informing them of the nature of the research and the approach that would be followed (see Attachment **9.1**). Participation in the study was positioned as voluntary and participants were required to sign the *Confidentiality and Consent Form* as acceptance of the conditions of the research study; three prospective participants declined the invitation to participate and one did not provide a signed Confidentiality and Consent Form. The profile of those who did participate is illustrated in Table 7.

	Role		Gender		Ethnicity[5]	
	Management	Operational	Male	Female	White	Colored
Organizational Representation	12	10	13	9	18	4
Kindle Representation	7	7	6	8	12	2
Blend Representation	5	3	7	1	6	2

Table 7. Profile of research participants

4.3.4 Data Collection

Data collection occurred over a six-month period, starting in January 2017 and completing in June 2017. During this period all the interviews were completed and transcribed. Collection of audio-visual material was done periodically during February 2017 and March 2017. Observation through the attendance of meetings and a presence in the Kindle office environment continued until 13th July 2017, at which point it was decided that nothing new was emerging from these observations. Data collection was concluded with an email to all participants on 31st July 2017, to advise that the initial data collection was complete, the format of any future interaction and when they could expect feedback from the research.

4.3.4.1 Types of Data

All the data gathered for this research is qualitative in nature. The different types of data collected, and the advantages and limitations of each type are described in Table 8. This selection of sources covers most of the major sources of data for case studies (Yin, 2009). The use of different types of evidence provides a balance for the weaknesses inherent in each individual source and contributes to the corroboration of findings and conclusions (Yin, 2009). The particulars concerning the collection of each type of data for this research are described in the sections that follow.

[5] Note: Colored is a term used in South Africa, including on the national census, for persons of mixed race ancestry (The World Factbook. Available: https://www.cia.gov/library/publications/the-world-factbook/geos/sf.html)

Data Collection Type	Type Option Selected	Advantages of the Type	Limitations of the Type
Interviews	– Face-to-face, one-on-one, in person, semi-structured interviews	– Useful when participants cannot be directly observed. – Participants can provide historical information. – Allows researcher control over the line of questioning.	– Provides indirect information filtered through the views of interviewees. – Provides information in a designated place rather than the natural field setting. – Researcher's presence may bias responses. – Not all people are equally articulate and perceptive.
Observations	– Complete observer – researcher observes without participating.	– Researcher has a first-hand experience with participant. – Researcher can record information as it occurs. – Unusual aspects can be noticed during observation. – Useful in exploring topics that may be uncomfortable for participants to discuss.	– Researcher may be seen as intrusive. – Private information may be observed that researcher cannot report. – Researcher may not have good attending and observing skills. – Certain participants may present special problems in gaining rapport.
Documents	– Public documents, such as web pages or documents published on the web. – Documents containing organization or project specific information.	– Enables a researcher to obtain the language and words of participants. – Can be assessed at a time convenient to researcher. – Represents data which are thoughtful in that participants have given attention to compiling them. – As written evidence, it saves a researcher the time and expense of transcribing.	– Not all people are equally articulate and perceptive. – May be protected information unavailable to public or private access. – Requires the researcher to search out the information in hard-to-find places. – Materials may be incomplete. – The documents may not be authentic or accurate.
Online Questionnaire	– Commercial survey products like Qualtrics.	– Eases creation and distribution of questionnaires. – Can generate descriptive statistics or graphed results.	– Lack of control over responses.
Audio-Visual Materials	– Photographs	– May be an unobtrusive method of collecting data. – It is creative in that it captures attention visually.	– May be difficult to interpret.

Table 8. Types of data collected (Adapted from Creswell, 2009:179-180)

4.3.4.1.1 Interviews

Interviews were used to collect information from project stakeholders. All the interview sessions were audio recorded and the recordings were transcribed by the researcher within 48 hours of the session. In one instance the participant did not provide a signed release for use of their data. The audio recording of this interview was not transcribed and the data was not used. All interviews were semi-structured and used open-ended questions to encourage participants to share their views and situate their response in their particular context (Creswell, 2009). Four themes, together with the cultural implications in each theme, were discussed with every participant;

1) The organization;
2) The project;
3) Leadership;
4) Performance.

Questions intended to guide the interview (see Section 9.3) were prepared for each theme to bring a degree of consistency to the interviews (Creswell, 2009). However, discussion on each theme varied in focus and depth, according to each individual. This variation was emergent in each interview and to some extent represented the interviewees interest or focus areas on each of the themes. Furthermore, it was necessary to adjust the approach for different participants in a number of ways. Firstly, participants known to the researcher from past commercial interactions generally spoke quite freely and needed little prompting. However, interviews with participants who were new acquaintances required more engagement from the researcher. Secondly, interviews with operational versus management level participants needed to be handled differently. Questions directed at management level participants needed to be framed in the context of a broader, strategic and long term view, while questions for operational level participants were framed to reflect more immediate or short term scenarios. For instance, operational participants were asked who they considered to be leaders and why, while management staff were asked what the organization was looking for in its leaders. The learnings from each interview session were applied to subsequent sessions. For example, in the latter interviews, participants were asked if there was any further information they would like to contribute. On some occasions, participants used the opportunity to stress aspects of the discussion particularly important to them. This was a valuable aid in interpreting understanding.

4.3.4.1.2 Questionnaires

Online questionnaires were used to supplement the interviews, and collect additional supporting information from each participant; information of a sensitive nature such as details of age or ethnicity and more routine information, such as participant qualifications (see Section 9.4). By the end of the data collection phase, 12 participants had not completed the questionnaire. They were each asked again to provide the information. This resulted in the completion of an additional four questionnaires, making a total of 14 completed out of a possible 22. While the information requested in the questionnaire was initially anticipated as relevant to the research, the relevance did not emerge during the inductive theorizing and the questionnaire data was subsequently not used.

4.3.4.1.3 Observation

Interactions central to IS development work, mostly in the form of meetings were observed to uncover information relevant to the research study. All the meetings were audio recorded and notes were taken by the researcher of events or behaviors that occurred that were of relevance to the research questions. The observation opportunities were refined over time on the basis of the practical realities of

each project. In addition to meetings convened by the two development teams, the researcher also observed meetings convened by the organizational portfolio committee. These meetings consider IS project activities in the context of the organization's strategic objectives. Observation in all instances continued until '*saturation*' was reached; minimal incremental learning occurred in respect of observed phenomena (Glaser & Strauss, 1967).

4.3.4.1.4 Documentation

Documented information of an historical nature with a national or organizational focus was collected to provide an account of the context in which the organization, the project, and its stakeholders interact. A range of formal documents related to management of the projects was also collected. This documentation served to corroborate, contradict or fill in gaps in the information gathered through face-to-face techniques.

4.3.4.1.5 Audio-Visual Material

Information regarding physical artifacts, like office posters and signage were collected through still photography and through the use of field notes. These data make a contribution to understanding the symbolic information present at the organizational and project level.

4.3.4.2 Procedures for Recording Information

Interviews and meetings were recorded to maintain accuracy of the data gathered from face-to-face interactions. In addition, significant or meaningful observations were noted at meetings. A notebook was used to capture field notes, or to record *ad hoc* interactions with participants or other organizational members. Photographs of physical artifacts, like organizational and project signage were also taken.

All the data, including audio recordings of interviews and meetings, photographs, organizational and project documentation, information from the online questionnaire and websites, and all written records in the form of field notes and meeting notes were imported into the qualitative data analysis tool, NVivo. All audio recordings of the interviews were transcribed. All the information gathered in the study was stored digitally in a database created for this research project.

Journals of the research project were kept to record events considered important at the time and to note decisions, ideas and insights as they occurred during data collection and analysis activities. These journals took the form of NVivo documents and are stored with the rest of the data collected for each case.

4.3.4.3 The Data Sets

The *data corpus* was divided into a number of different data sets (see Table 9) corresponding to each of the following secondary research questions:

SRQ1: What is relevant about national and organizational cultures for IS development projects?

SRQ2: How is culture implicated in leadership?

SRQ3: How is culture implicated in performance?

SRQ4: How is leadership implicated in performance?

Data Set	Description of the Data	Secondary Research Questions
National Data Set	Data related to the nation is covered by the following data items. – Online documents	SRQ1
Organizational Data Set	Data related to the organization is covered by the following data items: – Audio recording and transcripts of interviews with organizational representatives – Audio recording and researcher notes from portfolio meetings – Internally published organizational governance policies, covering topics like code of ethics, conflicts of interest, whistle blowers – Information from the organizational website regarding the company history, who they are, what they value – Photographs of internal posters reflecting organizational values	SRQ1, SRQ2, SRQ3, SRQ4
Kindle Data Set	Data related to Kindle is covered by the following data items: – Audio recording and transcripts of interviews with project stakeholders – Audio recording and transcripts of project meetings – Programme / project planning documentation – Other project management documents, like risk logs – Photographs of internal posters and signage reflecting project values	SRQ2, SRQ3, SRQ4
Blend Data Set	Data related to Blend is covered by the following data items: – Audio recording and transcripts of interviews with project stakeholders – Audio recording and field notes of project meetings – Other project management documents, like status reports and risk logs	SRQ2, SRQ3, SRQ4

Table 9. Data sets, content and associated research questions

The content of each of the four data sets is described in the sections that follow.

4.3.4.3.1 The National Data Set

Data at national level was gathered from publicly available websites and online publications. A search of the group 'Customs & Cultural Heritage' on the LexisNexis *Academic* database using the terms *(culture 'south africa')* returned 84 articles from local and international newspapers. In addition, specific websites (see Table 10 for details) were searched for information. Five articles were retrieved from these searches.

Website	Search Criteria	Data Collected
www.exploresouthafrica.net	*culture 'south africa'*	Culture; Details on ethnic diversity in South Africa.
www.thedti.gov.za	*BBBEE*	BBBEE status in South Africa.
www.cia.gov	*South Africa*	Historical background of South Africa; Details of people and society in South Africa.
www.statssa.gov.za	*Census*	Demographics of South Africa.
www.statssa.gov.za	*Labour or population*	Information on population and employment.

Table 10. Website sources for national data

The complete national data set is illustrated in Figure 17.

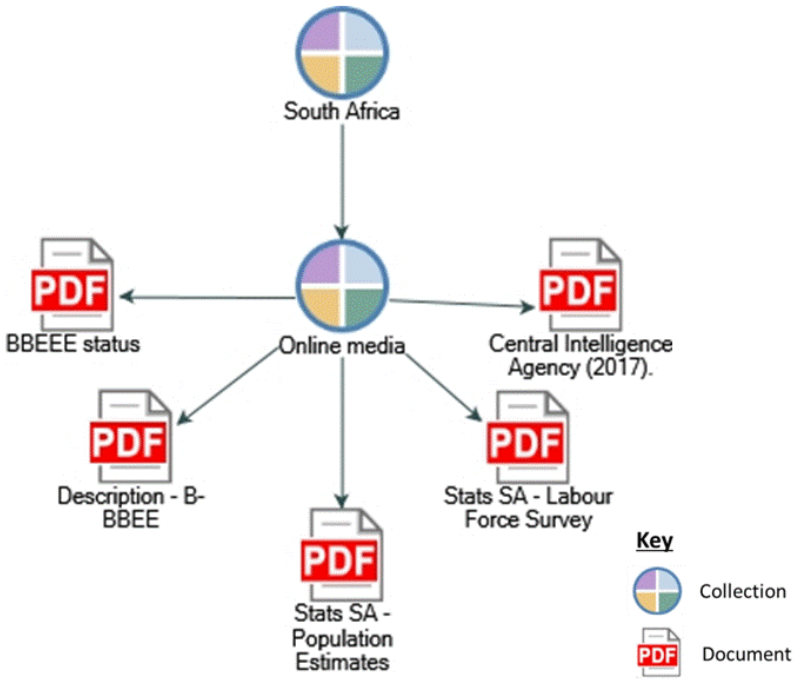


Figure 17. The national data set

4.3.4.3.2 The Organizational Data Set

The interviews with all the participants included questions pertinent to gathering information about the organization relevant to the research questions (see Section 9.3). The researcher also observed meetings convened by the organizational portfolio committee. These meetings consider project activities in the context of the organization's strategic objectives. Documented information of the organization in the form of internally published documents, online newsletters and information from organizational websites was also collected to provide an account of the context in which the project and its stakeholders interact. Information regarding physical artifacts, like office posters and signage were collected through still photography and through the use of field notes. The complete organizational data set is illustrated in Figure 18.

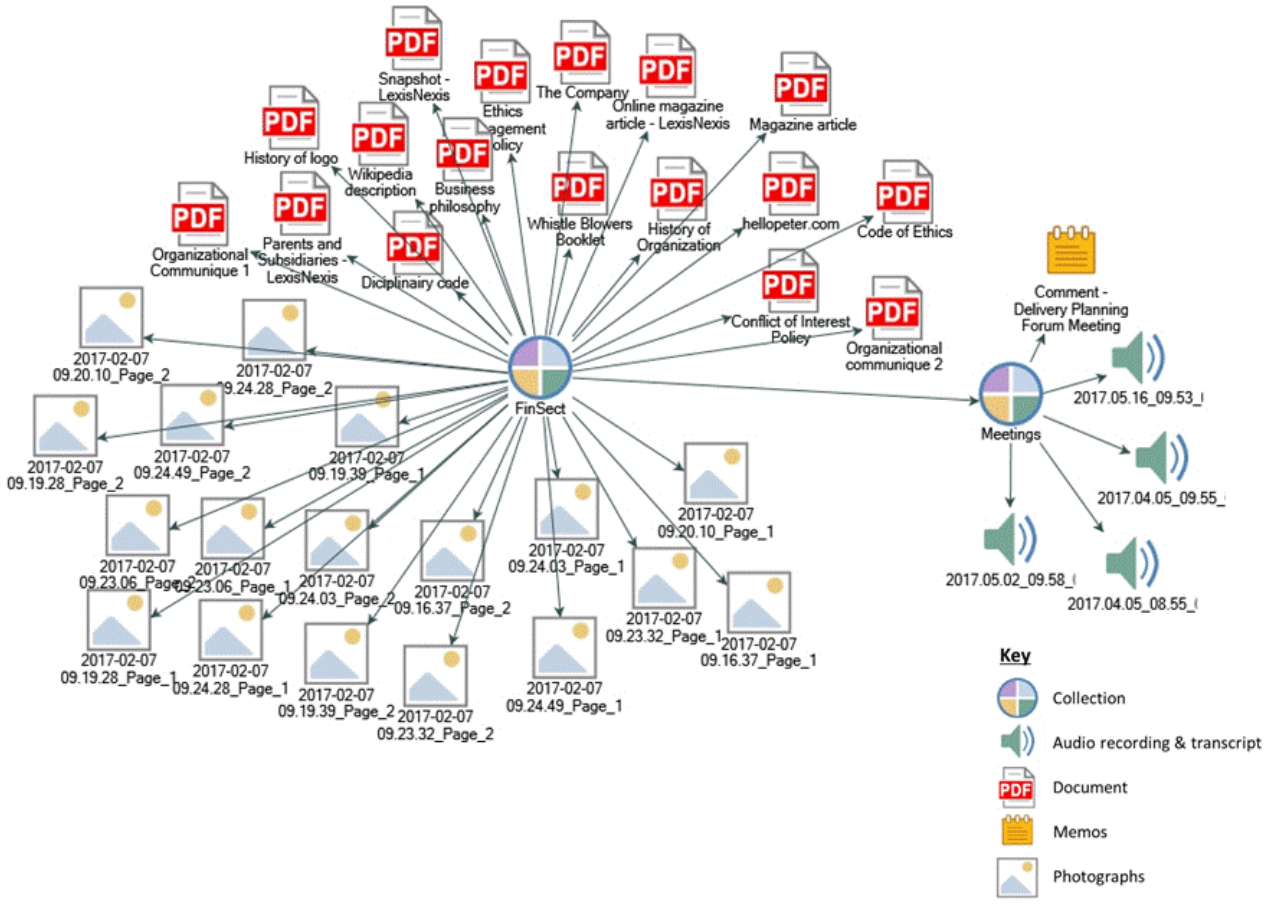


Figure 18. The FinSect data set

4.3.4.3.3 Kindle Data Set

Interviews were held with all individuals who agreed to participate in the research. The researcher also observed project meetings convened by the project or programme manager. Some meetings consider activities specific to achieving project objectives, while others consider project activities in the context of the programme objectives. Documented information of the project in the form of internally published documents was also collected to corroborate, contradict or fill in gaps in the information gathered through face-to-face interview techniques. Information regarding physical artifacts, like office posters and signage were collected through still photography and through the use of field notes. The complete Kindle data set is illustrated in Figure 19.

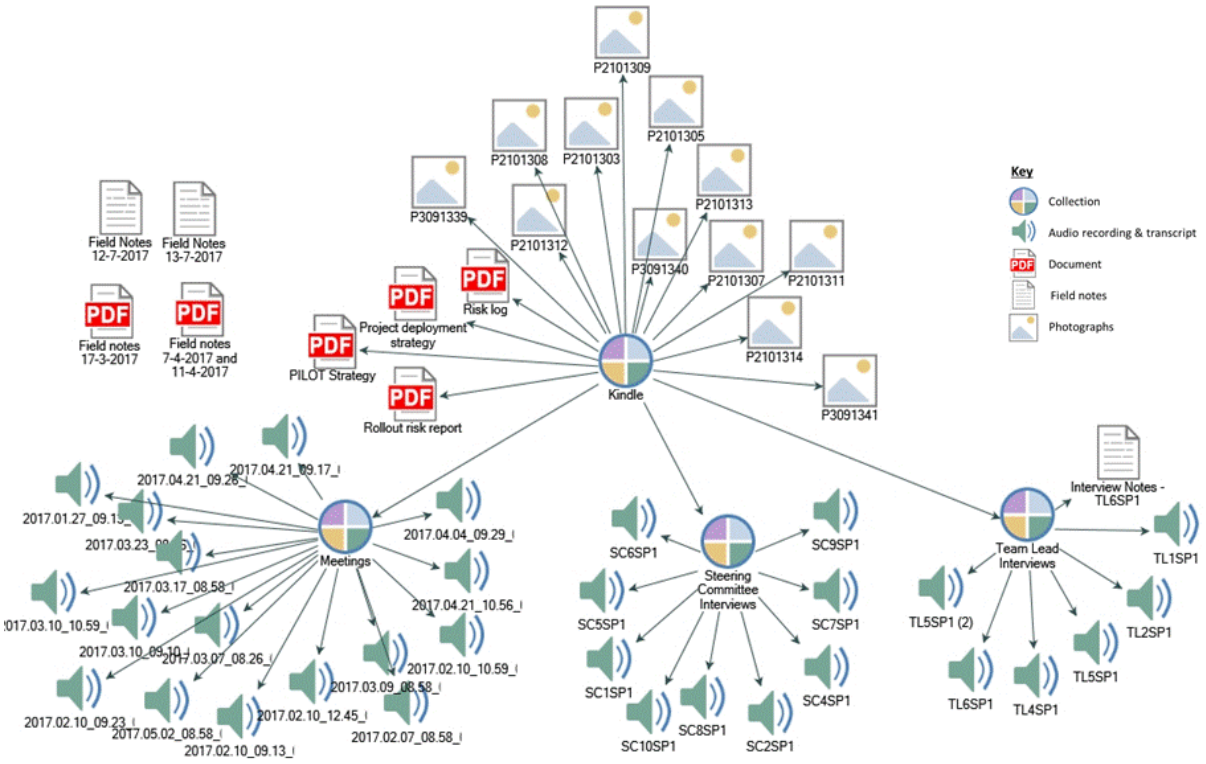


Figure 19. The Kindle data set

4.3.4.3.4 Blend Data Set

Interviews were held with all individuals who agreed to participate in the research and the researcher also observed project meetings convened by the project manager. Documented information of the project in the form of internally published documents was also collected to corroborate, contradict or fill in gaps in the information gathered through face-to-face interview techniques. The complete Blend data set is illustrated in Figure 20.

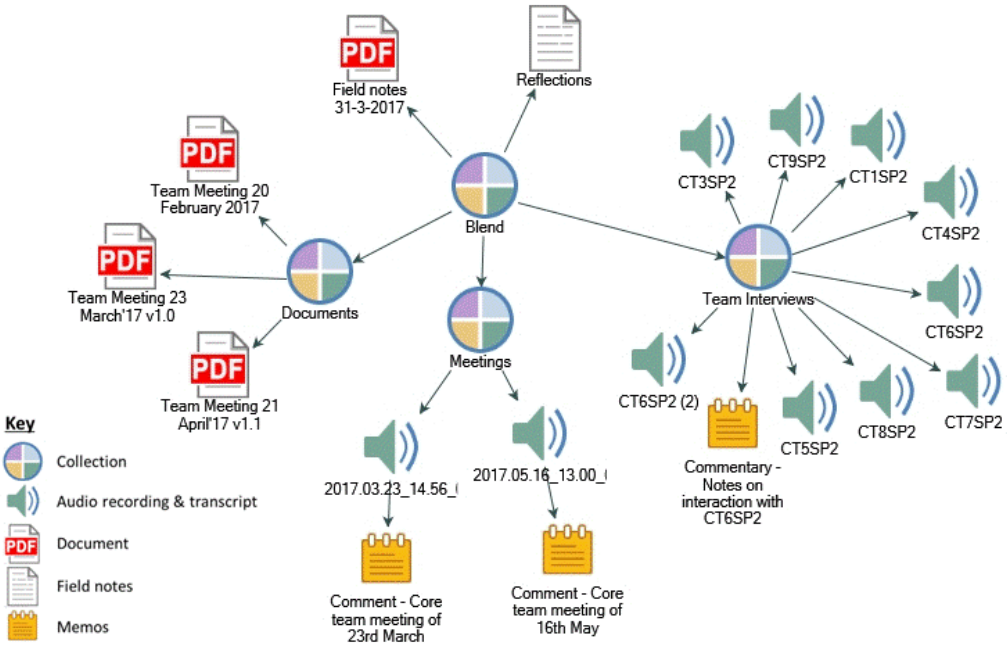


Figure 20. The Blend data set

4.3.4.3.5 Summary of the Data

A summary of the data gathered for each data set is described in Table 11. The bulk of the data is gathered through interviews and attendance at meetings, supplemented with photographs and documents.

Description	National Data Set	Organizational Data Set	Kindle Data Set	Blend Data Set	Total
Audio recording and transcripts of interviews		22	14	8	**22**[6]
Audio recording and notes from meetings		5	17	2	**24**
Internally published documents		7	4	3	**14**
Online questionnaire		2	4	8	**14**
Photographs of internal posters & signage		18	12		**30**
Pages from public websites		8			**8**
Online public documents	5				**5**
Online newspaper / magazine articles		2			**2**

Table 11. Description and count of data items in each data set

4.3.4.4 Triangulation of Data

Data triangulation was used in this research in two ways; firstly, to confirm specifics of empirical observations and secondly, to clarify understanding and improve abstraction of theoretical concepts (Flick, 2004). The triangulation of data was achieved by using data drawn from a multitude of sources (Eisenhardt, 1989; Yin, 2009) including interviews, observations, organizational and project documentation and photographs. Thus, documentary evidence of project risks could be used corroborate the view from participants of the organizational attitude to project risk management. Similarly, messages contained in posters and signage, together with the décor of offices and meeting rooms broadened understanding of factors motivating the actions of organizational members. Data triangulation also revealed conflicting evidence, highlighting the need for deeper inquiry. For example, behavior observed in project team meetings contradicted details from participant interviews prompting further reflection by the researcher. The data triangulation afforded by multiple sources of data thus serves to both substantiate and strengthen the knowledge claims from this research.

4.3.5 Data Analysis

I followed the principles for interpretive field studies proposed by Klein and Myers (1999) to analyze the data. Data collection and analysis occurred concurrently and followed an iterative and recursive cycle, as illustrated in Figure 21. This approach is aligned with the fundamental principle of the hermeneutic circle in interpretive field studies (Klein & Myers, 1999).

[6] Note that each interview had an organizational and an IS development theme, hence the number of people interviewed is 22 rather than 44

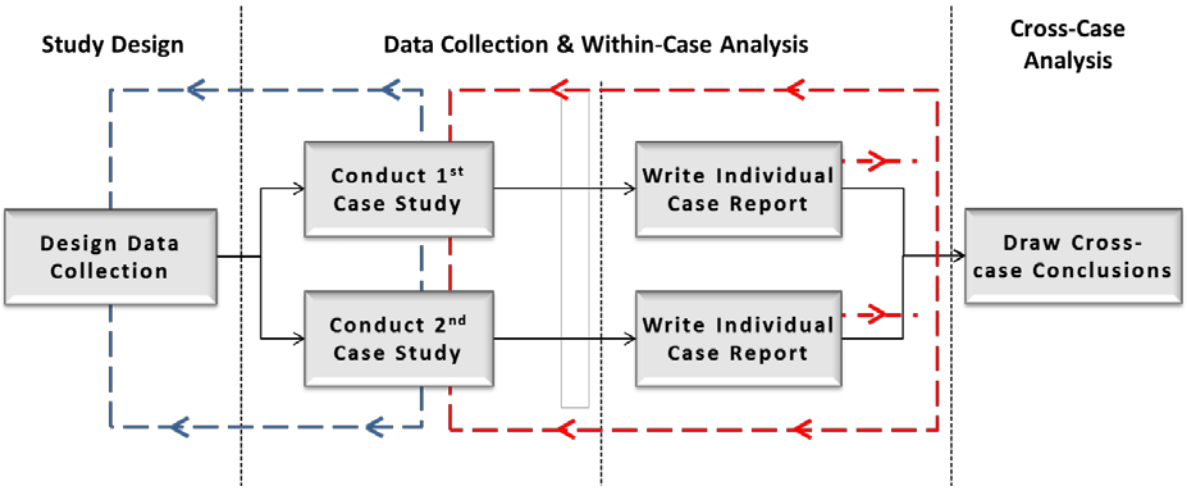


Figure 21. Data collection and analysis process (Adapted from Yin, 2009)

4.3.5.1 Thematic Analysis

Thematic analysis (TA) was chosen as the most appropriate method to analyze the data over other qualitative techniques. While TA is relatively new as a formally described qualitative technique in the social sciences (Braun & Clarke, 2013) with only 2 studies using TA found in the leading IS journals (AIS, 2011), a further 25 studies published since 2012 were found in other journals, including 13 articles in *Computers in Human Behavior* and 4 in *Information Technology & People*. An inductive approach to data analysis was followed, using a form of TA that looks for the latent meaning in the data (Braun *et al.*, 2015; Joffe & Yardley, 2004). This data-driven approach emphasizes the identification and interpretation of patterns occurring in empirical data (Grover & Lyytinen, 2015). The theory of Cultural Implications in Information Systems Development was used as a structural framework to inform the initial identification of themes.

As indicated in Figure 21 data analysis started while the data collection process was still in progress. The inductive theory building cycle involves identifying concepts and themes from the data and coding these with a succinct label, either by using *in vivo* codes taken directly from the data, or by allocating labels that appropriately reflect the underlying data (Strauss & Corbin, 1998). At this stage I looked for features in the data relevant to the research question and allocated codes to the data (Braun *et al.*, 2015; Joffe & Yardley, 2004), producing a code book of 240 codes and associated data extracts. Once data collection was completed, I re-read all the data in the *data corpus* to gain familiarity with the main features in the data. I concentrated on allocating the same degree of attention to each piece of data. I annotated interesting features, and produced memos summarizing thoughts and reflections on the data. The notes and memos generated further codes and prompted reflection on the existing codebook, resulting in a collation of the codes. At the end of this process the codebook contained a list of 101 initial codes with which I began the within-case analysis of the first case.

4.3.5.2 Within-case Analysis

I followed the same approach to within-case analysis for each of the cases in the study. As the national and organizational data sets provide the context for the two cases, these data sets were combined

with the case data for the analysis phase. The steps in the analysis process are illustrated in Figure 22 and described in further detail below.

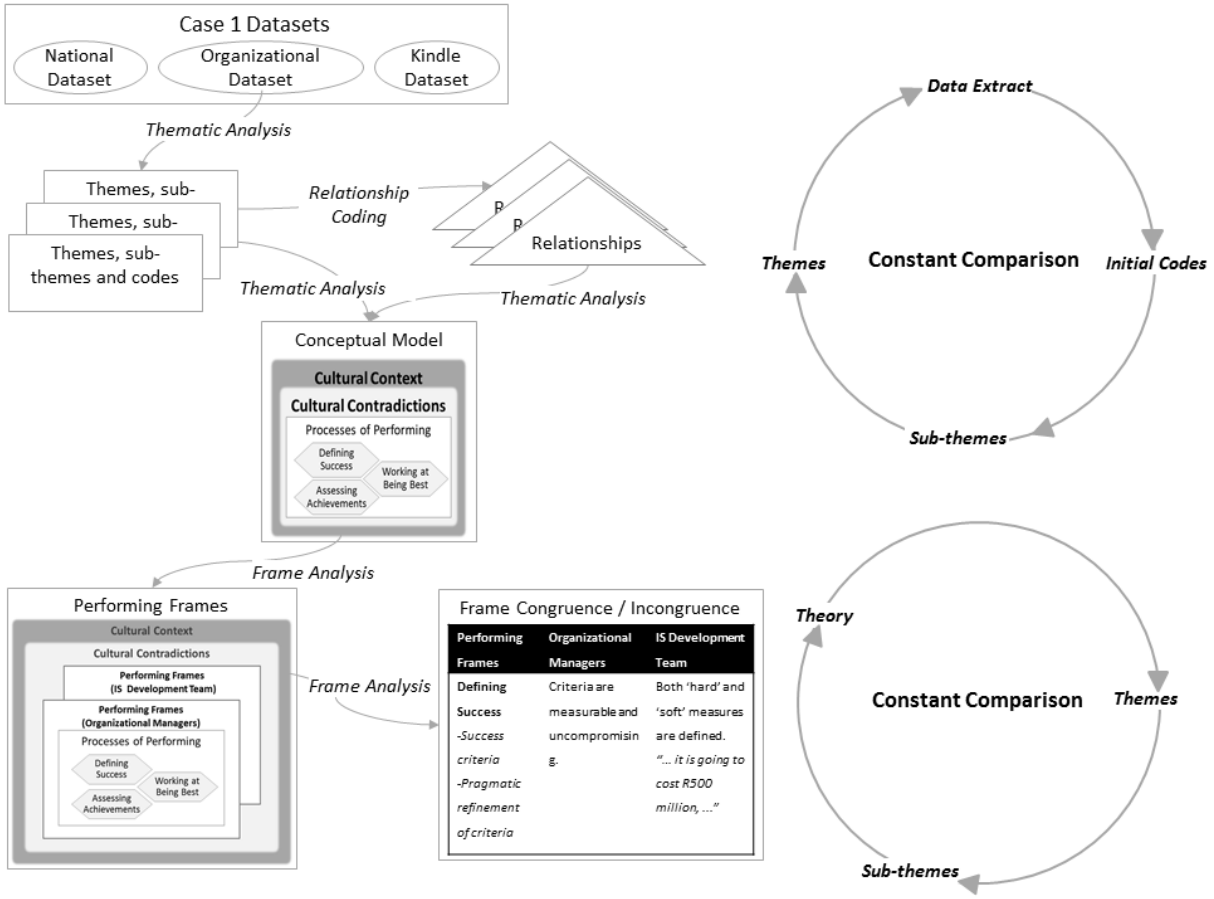


Figure 22. The within-case analysis process

Each data item in the national, organizational and the case data sets were analyzed, looking for patterns and features in the data that were relevant in answering the research question, and coding these data extracts with the initial codes. In some cases, additional codes were created when it was felt the existing codes did not adequately represent the data. Once the data sets had been analyzed, the codes were reviewed and collated. While coding, I used the transcripts from interviews and the notes taken at meetings as the data source for indicating potential relationships between codes. Once I had completed the coding of a transcript or field note, I used the following search criteria in an NVivo query to search the text for a relationship:

> *accordingly OR "as a result" OR consequently OR reason OR since OR thus OR therefore OR then OR because OR yet OR why OR "thats why" OR "that's why" OR for OR as OR "resulted from" OR "was the result of" OR "due to" OR "effect of" OR "result in" OR caused OR "have an effect" OR "the cause for" OR "the reason for"*

The result from each search was examined and a relationship was coded if it appeared relevant to the research question. I created relationships as I went along, or coded the text to relationships that already

existed. Periodically, I used '*Project Maps*' in NVivo to explore the relationships. This exercise involved the collation of some relationships and the removal of others.

I used NVivo's '*Project Maps*' as a visual aid in the validation of codes and their relationships. This assisted to further consolidate the codes into broader patterns of meaning and facilitated the identification of themes and sub-themes. I used Excel to develop properties and dimensions for each of the themes and sub-themes. The theme properties reflect features in the themes that set them apart from one another and assist in eliminating overlapping themes. The reviewing, collating and removal of codes and relationships went through a number of cycles; each time the cycle was repeated, the results were reviewed for validity. A process of constant comparison was used to revisit emerging themes, to check their distinctiveness or possible alignment with other themes in the data set or with concepts from related theory. This iterative analysis of data and the process of constant comparison produced the emergent theory (Braun *et al.*, 2015; Corbin & Strauss, 2015). It could be argued that the recursive revisiting of codes and relationships is highly subjective, and there is a danger that findings could be forced into particular boxes to suit an emerging framework. In all cases the researcher adopted a reflexive attitude and used questions like '*Does this data really make sense in the context of this code*?' or '*How else could this data be reflected*?' to test the validity of the activity.

At this stage I started to write up the findings, where I replicate an approach used by Adolph et al. (2012). I highlight the themes with an underlined, bold, italicized font, the sub-themes in an underlined, italicized font, and the initial codes in an italicized font. For example, the theme 'Cultural Context' is highlighted as ***Cultural Context***, the sub theme 'Defining Success' is highlighted as *Defining Success* and the code 'Efforts at Transformation' is highlighted as *Efforts at Transformation*. In relating idiographic data to the themes and codes, it was necessary in some instances to replace the actual words used by participants by descriptors in square brackets, to maintain confidentiality. For example, a participants' use of the organization's name is replaced in the data extract as [the Organization]. Writing up while the analysis was still in progress proved useful for the further validation of themes, relationships and associated data extracts. This iterative process refined the themes, sub-themes and codes and provided a basis for the development of a conceptual model for each case.

After development of the conceptual model, frame analysis was used as a theoretical lens for the next stage of the data analysis. Frame analysis offers an approach for structuring the narrative in the data. The choice of frame analysis for this stage of the research is discussed in section 3.4.2. The conceptual model provided the frame domains, or specific knowledge areas (Orlikowski & Gash, 1994) that emerged as relevant to research participants as they go about the business of IS development. Two social groups were identified for the analysis, 'Organizational Managers' and 'IS Development Team'. The identification of these two groups was informed by the research question and by the view that 'managers', 'system

developers' and 'users' are key actors in technological change initiatives (Orlikowski & Gash, 1994). The detailed composition of each social group for the frame analysis is described in Table 12.

Group	Description		Kindle Participants	Blend Participants
Organizational Managers	Executives	Individuals holding an executive position in the organization.	SC2SP1, SC7SP1, SC8SP1	
	Senior Managers	Individuals holding senior management positions in the organization, typically Heads of departments.	SC1SP1, SC10SP1, SC4SP1, SC5SP1	CT7SP2, CT3SP2, CT4SP2, CT5SP2
IS Development Team	Programme / Project Managers	Individuals involved in programme or project management activities. This includes assistant project managers and supporting business consultants.	SC9SP1, SC6SP1, TL2SP1	CT8SP2, CT9SP2
	Technical Specialists	Individuals involved in the technical work of IS development. This includes business analysts, systems architects, systems analysts, developers and testers.	TL1SP1, TL4SP1, TL5SP1, TL6SP1	CT1SP2, CT6SP2

Table 12. Composition of the frame analysis social groups

Besides structuring the narrative in the data, frames provide an opportunity for applying the '*Principle of Dialogical Reasoning*' (Klein & Myers, 1999). Incongruence between frames could, for instance, highlight possible contradictions between theory and data. The results of the analysis are described in detail in section 5.2.

4.3.5.3 Cross-case Analysis

The cross-case analysis used a mixed strategy of case-oriented and variable-oriented analysis (Miles *et al.*, 2014). The case was considered as a whole and similarities and differences between the outcomes of each case were examined. The cross-case analysis also compared the themes in each case to one another. For instance, the performing frames of organizational managers in the first case were compared with the performing frames of organizational managers in the second case. The cross-case analysis followed for this research study is illustrated in Figure 23.

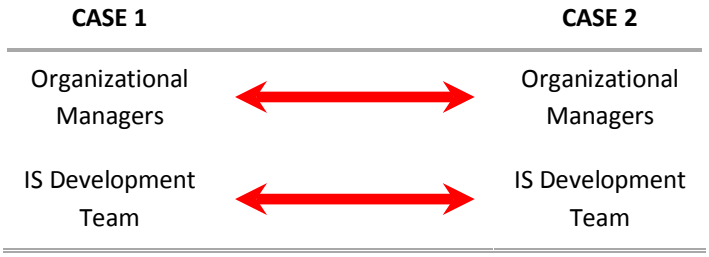


Figure 23. Illustration of the focus for cross-case analysis

Narrative descriptions (Miles *et al.*, 2014) were used to elaborate on the themes in the data and weave supporting data into the narrative. Tables were used to illustrate the differences between the cases and the

summarize these. Matrix displays chart or table the themes and supporting data for analytic purposes. Matrix displays are useful aids in visualizing data and assist the processes of reflection, verification and conclusion drawing (Miles *et al.*, 2014). The results from the cross-case analysis are described in detail in section 5.6.

4.3.6 Biases of Researcher and Research Participants

I have worked previously in the organization that participated in this research as a temporary employee, contracted on numerous occasions since 2006 to manage various business and IS development projects. My last involvement with the organization was in 2013, at which time I was involved in the early stages of the Kindle program, specifically the selection of the technology solution. Consequently, I have worked before with most of the participants in the study, and know others from professional interactions. Of the 22 participants in the study, only 7 were new acquaintances at the start of the interview sessions. My prior relationship with most participants may have had an influence on their responses. Additionally, I became aware that my previous relationship with some participants could be predisposing my interpretation of their responses. I consequently revisited these interpretations for further reflection.

All of the participants were informed of the cultural aspect of the research. In some instances, participants made an effort to relate their responses to their understanding of culture. This may have resulted in an over engineered response. This phenomenon became a point of reflection for the researcher during the data analysis.

One participant started the interview by saying how much it meant to her that I had asked for her participation. She is a senior employee, but she stated she felt honored that I trusted her perspective enough to ask her to participate in what she referred to as:

> *"…this very, personally important work." SC6SP1*

Her perspective may have been held by other participants and could have influenced participants to provide responses intended to please the researcher. This became a further point of reflection during the data analysis.

4.3.7 Research Tools

A number of electronic and digital tools were used in the course of the research. All interviews and meetings were recorded, and these audio files were transferred to an encrypted, password protected directory on my personal laptop and erased from the audio recorder. Photographs of office signage were collected and stored in a similar fashion.

The qualitative data analysis tool, NVivo 11 for Windows Version 11.4.1.1064 Pro Edition (NVivo) from QSR International was used extensively in a number of ways. NVivo is commonly used in qualitative research (Parent & Macintosh, 2013; Zolfaghari *et al.*, 2016) and supports the researchers' efforts in several ways. For instance, Joffe (2012) describes the usefulness of qualitative software such as NVivo as follows:

> *"...as a mechanical aid, the computer is able to enhance research for the following reasons: It allows researchers to deal with many more interviews than manual analyses can; Since it can handle large datasets useful comparisons between groups can be made; The researcher is assisted in looking at*

> *patterns of codes, links between codes, sequencing and co-occurrence in a highly systematic fashion, since retrieval of data is made far easier." (Joffe, 2012:217)*

In my case, NVivo served firstly as a database for all the data related to the research study. The visual aids available in NVivo easily provided a graphic illustration of the data that could be incorporated into the thesis. This feature also proved particularly helpful in understanding the nature of the data in each data set. I used Nvivo extensively to identify patterns and themes and to relate these to the empirical data from which they originated. I also used NVivo in a similar fashion to identify relationships in the data, and to relate these relationships to the empirical data. Again, the visual aids in NVivo proved helpful here, both to improve my understanding of the data and as a practical tool for producing graphics of the relationships for the thesis. Finally, I used the '*Framework Matrix*' capability in NVivo for my initial abstraction of the data into higher order concepts.

In addition to NVivo, I made extensive use of Microsoft Excel and PowerPoint. Excel proved more practical than NVivo for the recurring validation of the themes against the idiographic data, and the recording of properties for the themes, while Powerpoint proved a more effective tool than NVivo for modelling the data. It should be noted that while the software greatly facilitates the routine aspects of the analytical work and control over the data, the interpretation and abstraction of data into valid and meaningful concepts is still the province of the researcher.

4.3.8 Access, Privacy, Confidentiality and Ethics

Ethics in research studies is of utmost importance. Consequently I have paid careful attention to the manner in which data was collected, stored, analyzed and communicated.

Participants were made aware at the beginning of the study that their participation was entirely voluntary and that they could withdraw from the study at any stage. Each participant was required to read and sign a consent form in this regard before the interview session. Three prospective participants declined the invitation to participate; their position was accepted without the need for any explanation. One participant did not sign a consent form despite already concluding a telephonic interview. In this instance, the audio recording was not transcribed and the data were excluded from the study.

All participants understood that this thesis will be published and made publically available online in line with the University of Cape Towns' commitment to open access to knowledge. Consequently, I took steps to maintain the anonymity of the organization and the individuals participating in the study. All information obtained from participants or public sources has been anonymized through the replacement of participant identifiers with alpha-numeric codes or pseudonyms. Thus the organization name is replaced with FinSect, participants are referred to as SC1SP1, CT2SP2, etc. and the pseudonyms Kindle and Blend have been used in place of the actual project identifiers.

Finally, I acknowledged the responsibility of researchers not to treat their research and their research subjects with the view that the truth is all that counts (Miles *et al.*, 2014). Attention was paid to the potential harm that could result from the research, and these considerations guided the decisions and

actions of the researcher (Miles *et al.*, 2014). In particular, as organizations can be made vulnerable if their culture is revealed (Schein, 2010), special consideration has been given to this organizational risk.

The protocols required for ethics approval of the research from the Ethics in Research Committee, Commerce Faculty, University of Cape Town are available as attachments 9.1, 9.2, 9.3, 9.4.

5 ANALYSIS

This chapter describes the results of an analysis of the data in relation to the primary and secondary research questions reiterated below, and the findings from this analysis.

How are culture, leadership and performance implicated in Information Systems development?

SRQ1: What is relevant about the national and organizational cultures for IS development projects?

SRQ2: How is culture implicated in leadership?

SRQ3: How does culture influence performance?

SRQ4: How does leadership influence performance?

The chapter begins with background information to provide a context to the analysis of the data. This is followed by a within-case analysis of data collected for each of the cases in the study. The within-case analysis produced a conceptual model which was refined after a cross-case analysis of the cases. This refined model represents the outcome of the interpretive theorizing that is ongoing throughout the analysis process (Braun & Clarke, 2006; Miles *et al.*, 2014).

5.1 Background

This section provides background information as context to the research study. Information regarding the country and organization in which the research is conducted, as well as the two cases in the research study is presented.

5.1.1 National Context

In 1948 the ruling government of South Africa instituted a policy of apartheid that legislated the separate development of ethnic groups, favoring the white minority at the expense of the black majority (Central Intelligence Agency, 2017). Internal protests, insurgency and boycotts by some nations and institutions led to an eventual peaceful transition to majority rule, with the first democratic elections held in 1994 (Central Intelligence Agency, 2017). Today, of an estimated 56.5 million South Africans, approximately 45.7 million are Black, 5 million Colored[5], 4.5 million White and 1.4 million Indian (see Figure 24) (Statistics South Africa, 2017). There are 11 official languages in use in South Africa (Central Intelligence Agency, 2017).

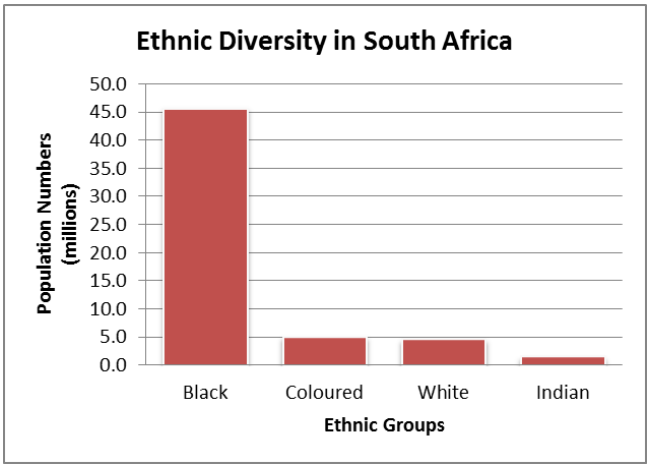


Figure 24. Ethnic diversity in South Africa

In an effort to increase employment equity among ethnic groups and different genders, the government introduced legislation in the 1990s referred to as the Employment Equity Act (No. 55 of 1998). Subsequently, at the beginning of 2007 the Codes of Good Practice in the government gazette were updated to make Black Economic Empowerment (BEE) a legal reality. The initiative was aimed at uplifting black business owners, stakeholders and employees and increasing equity in the economic market through the transfer of ownership. At the same time BEE was extended to include the Colored and Asian ethnic groups and was renamed Broad-Based Black Economic Empowerment (B-BBEE) (Entrepreneur Media SA (Pty) Ltd, 2018). Legislation requires any private enterprise that undertakes business with a public entity and any other business with an annual turnover in excess of R10 million to implement B-BBEE. Five elements are used to assess compliance with B-BBEE requirements; ownership, management control, skills development, enterprise development and socio-economic development. The B-BBEE regulations require companies to meet specific targets with respect to each of these (Entrepreneur Media SA (Pty) Ltd, 2018).

5.1.2 Organizational Context

The organization, FinSect (a pseudonym) is the largest player in their industry sector in the South African market, with a market share of more than 22%. The company is listed on the Johannesburg Stock Exchange and offers a diverse portfolio of products to more than 1 million customers. The diversity of the portfolio and a focus on profitability has allowed the organization to achieve a solid average return on capital over the last 10 years[7]. FinSect has a strong international diversification capability with world-class specialists and a strong and experienced management team. The company believes they employ the best people in the industry; over the years the organization has won numerous industry accolades and awards.

5.1.3 Kindle Context

Kindle (a pseudonym) is a strategic programme tasked to replace the organization's custom developed product administration system, with a package solution procured from North American suppliers. The programme has a history of false starts, dating back to about 2005. The scale of the change and associated risk were significant contributing factors to initial hesitancy to proceed with the initiative, which was eventually launched in 2012 when new executive leaders decided the change was imperative for future business growth. With a budget exceeding R500 million, and harnessing most of the best specialist resources available to the organization, Kindle represents the largest and most business critical initiative in the company. Furthermore, the combined scale, complexity and risk associated with the initiative are unprecedented in the organization.

The programme consists of many integrated projects, each with a focus on delivering a particular objective. At the time of the data collection for this study, one product line in the organization had been successfully transitioned to the new package. A single steering committee provides overarching governance for all projects in the programme. This includes directives regarding aspects like software development processes and tools, success criteria and escalation procedures. Additional decision-making groups,

[7] Note: sources for this information have deliberately been omitted to safeguard anonymity.

subordinate to the steering committee, adjudicate day-to-day Kindle activities for each product line. All the projects in Kindle use an agile software development methodology, in contrast to most other software development initiatives in the organization, which use a waterfall approach. In a sense, the Kindle development team is seen as a flagship team to lead a change in the way software development is approached in the organization.

The perspective of technical specialists for this research study is provided by the IS development team members from one of the projects in the programme, responsible for the migration of an existing product line to the new platform. The profile of this team includes permanent employees seconded to the initiative from departments within the organization, and temporary employees, contracted from local and international (India) sources.

5.1.4 Blend Context

Blend (a pseudonym) is a strategic initiative to implement a software package to manage the contracting and administration of external suppliers. Until now, the organization has relied on a variety of Excel spreadsheets to perform these tasks, creating a large administrative overhead for staff. The new technology solution is intended to remove the need for Excel, create a robust administrative platform and be viable for use by other companies within the larger organizational group. After a formal procurement process, the organization selected to implement a solution from a local vendor, with the agreement that the package would be customized to some extent by the vendor to create a better alignment with organizational requirements.

The project started on 2nd May 2016 with an expected completion date of 30th September, 2017, and an initial budget of R10 million. In February 2017 the portfolio office in the organization advised the project that it would be necessary to reduce the project funding to R8 million to manage emerging funding constraints in the organization. The project responded with a proposal to de-scope some integration with supporting systems. As the impact of this approach is a reduction in the operational efficiency of the new solution, the decision was taken to extend the project timeline to 31st March 2018. This will allow integration with the supporting systems in 2018 when anticipated additional funding is released in the new financial year.

The project team within the organization consists of stakeholders representing the senior managers in the affected business, the owner of the software package, a stakeholder whose organizational role is liaison between business interests and the organization's IT department, and a project manager and business analyst, both permanent employees in the organization. All customization of the packaged solution is handled by developers employed by the vendor and located off-site at the vendors' premises. The vendor is thus the most exposed to the complexity in the development effort. The development team within the organization is responsible for specifying the business requirements, facilitating the liaison between the vendor and existing supporting systems, including hardware procurement and IT governance

requirements, testing and implementing and roll out of the solution and managing the organizational change impacts.

5.2 Themes in the Data

The analysis of the data produced a number of initial codes. These codes can become themes if they capture a cluster of meanings and these meanings are important in relation to the research question (Braun & Clarke, 2006). Many codes do not become themes; codes may be combined into other more relevant codes, or discarded altogether in respect of further analysis (Braun & Clarke, 2006). Additionally, a code should be relevant across a number of data items and have a clear organizing concept to be considered as a theme (Braun & Clarke, 2006). Thus, in the course of analysis some codes will capture the central organizing concepts in the data and become themes, while other codes and their data will be discarded as irrelevant to the emerging theory. Some themes may be decomposed into sub-themes; the sub-theme shares the same central organizing concept of the theme, but serves to develop a distinct element of it (Braun *et al.*, 2015). These principles have been applied to the identification of the themes and sub-themes that relate to the empirical data in this research study.

5.3 Relationships between Themes

It is important to appreciate that while represented independently, the themes identified in the analysis process are not discrete and neatly contained. In effect they overlap and interact in complex ways. In some cases the same extract of the data may capture the essence of two or more themes and be coded to all. At other times the research participants may imply relationships between themes through their interpretation of events, revealing the interdependence of the themes. In these circumstances, the type of relationship was identified and if necessary, a '*Relationship Type*' was created in NVivo. A Nvivo '*Relationship*' between the themes using the relationship type was then created if it did not yet exist, and the data was coded to the relationship. This process resulted in a list of relationships between themes with associated data extracts.

Relationships between themes are also implicit in the theme and sub-theme structure (Braun *et al.*, 2015). In the analysis of the data in this research, the relationships provide another basis for understanding the contextual factors that influence behavior as well as providing a basis for examining the entangled nature of the different themes.

5.4 Analysis of the National and Organizational Data

This section describes the analysis of the national and organizational datasets. The national dataset (see Figure 17) was analyzed first. This data was subsequently supplemented with data from the interviews that revealed elements in the national culture that were influential in shaping the behavior and views of research participants. Analysis of the national data was followed by an analysis of organizational data collected from Kindle participants, during the within-case analysis of Kindle. Other organizational data, like company documents and photographs of posters and signage were included in the analysis at this stage.

The themes and sub-themes identified from this initial analysis were then revisited and refined with the data collected from Blend participants, during the within-case analysis of Blend. The final themes and sub-themes emerging from the national and organizational data are further described in the sections that follow.

5.4.1 Themes in the National and Organizational Data

The themes and sub-themes that emerged from an analysis of the national and organizational data, and the initial codes that were identified, are illustrated in Figure 25. The ***Cultural Context*** aggregates two sub-themes; *National Culture* and *Organizational Culture*. The sub-theme *National Culture* aggregates the codes *Efforts at Transformation* and *Workplace Diversity*. The sub-theme *Organizational Culture* aggregates in turn a number of codes; *Collective Decision Making*, *Attitude to Challenges*, *Excellence Matters*, *People are Important*, *It's a Family* and *Historical Influences*. Additionally, a number of codes were identified and subsequently discarded in respect of further analysis. Thus, while *The Working Environment* represents a cluster of meaning and aggregates the codes *Authentic Communication, Great company to Work For* and *Demands on Staff*, these were considered less relevant to the research topic and research questions and excluded from further analysis. The themes and sub-themes are therefore the focal points of the discussion and theorizing in the sections that follow.

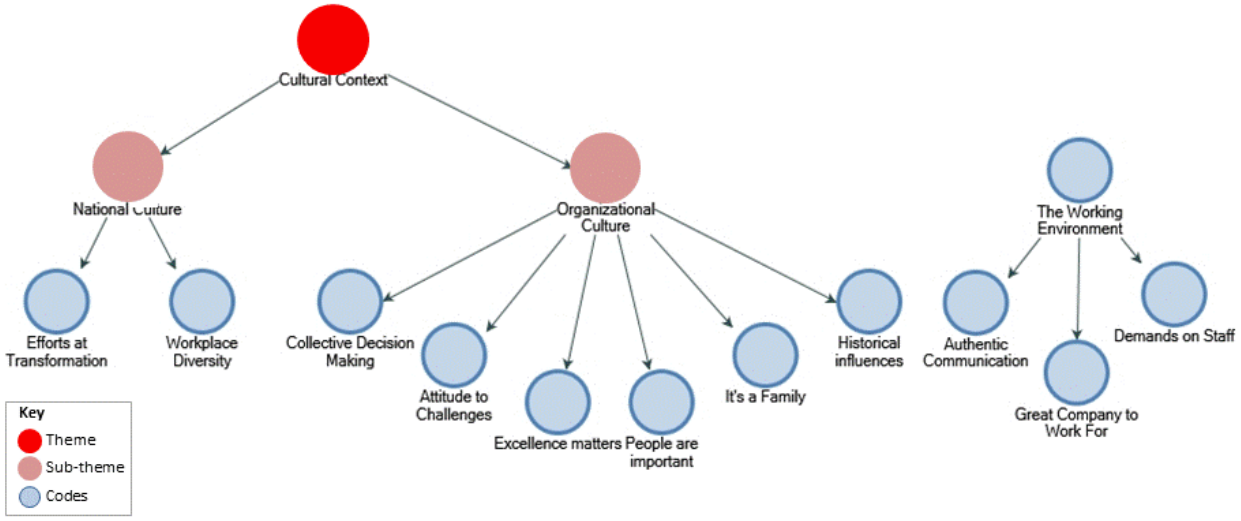


Figure 25. Themes, sub-themes and codes in the national and organizational data

5.4.2 Interpretive Theorizing – Cultural Context

The themes and sub-themes in the national and organizational data formed the basis for the interpretive theorizing that follows. The theme ***Cultural Context*** encapsulates the assumptions, beliefs and values emanating from different cultural levels that contextualize the actions and behavior of organizational members. The ***Cultural Context*** represents a complex and dynamic *milieu* of cultural influences. ***Cultural Context*** aggregates the two sub-themes illustrated in Figure 26. The sub-themes are further described and related to relevant idiographic data in the sections that follow.

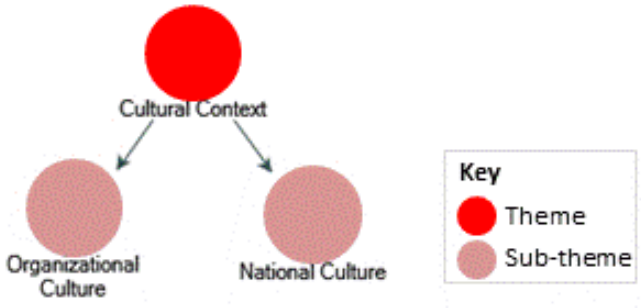


Figure 26. The theme 'Cultural Context' with sub-themes

5.4.2.1 National Culture

The sub-theme *National Culture* is not conceptualized as representing the national culture of South Africa. Rather, this study is aligned with the view that the notion of a single national culture is problematic (Baskerville, 2003; Signorini *et al.*, 2009). Furthermore, this notion runs counter to the interpretive paradigm followed for this research study. Instead, this study adopts a view of culture as dynamic, socially constructed, and context sensitive (Ravishankar, 2015; Suri & Abbott, 2013; Waring & Skoumpopoulou, 2012). Consequently, the sub-theme *National Culture* is conceptualized as those elements of culture at a national level that influence the behavior of individuals within the empirical situation of this research study.

The elements in the national culture relevant in this research context are the efforts to enact economic transformation and introduce ethnic diversity into the workforce. Varying perspectives exist in the organization regarding the effect, nature and pace of this transformation.

> *"I think we are able to manage the targets well, but it's not on your visible, senior, executive management layers. The company is still very much white, lily white male." CT9SP2*
>
> *"From a representation point of view, obviously we are not getting diverse. It's still all males, all men no women, no African black people on the project team. So for me that is so..." CT5SP2*
>
> *"Well, I think depending on how far you look back, I think it's changed a lot. If you just look at the staff mix on our projects, at the moment we are now 50/50, in the project world we now 50/50 EE and white, in the [business unit] its 80% EE." SC1SP1*

5.4.2.2 Organizational Culture

The sub-theme *Organizational Culture* is not conceptualized as representing the culture of FinSect. Rather, this study is aligned with the view that organizations have a cultural makeup comprised of the symbols, stories, experiences and collective memories of the different sub-units within the organization (Batteau, 2000). Thus the notion of a unitary organizational culture is unlikely (Jackson, 2011; Ravishankar *et al.*, 2011). Instead, this study conceptualizes *Organizational Culture* as those aspects of the organizational culture that emerge as relevant to organizational members as they go about the business of IS development in this empirical situation.

Established early in the 20th century, FinSect has a long history in the industry in which it operates. This history includes a reputation for taking good care of its members. The organization places a high value on its members, seeing them as fundamental to organizational success and working to accommodate the

needs of organizational members. This view is encapsulated in organizational documentation and is supported by organizational members in managerial and non-managerial roles.

> *"We believe in investing in our people. Being recognised as a Top Employer in South Africa is an indication that our efforts are paying off. It's proof that we're doing business with integrity, excellence, passion, innovation and humanity by also taking care of those closest to us - you." CD 2017-02-07 09.16.37_Page_2*
>
> *"So I really think if you ask me why we have been successful, it's not because we've got good capital, lots of capital, or the shareholders, all those things are important, I think our staff makes the big difference." SC2SP1*
>
> *"In general, I think there's a lot of, you know we do accommodate staff. You know, with being flexible with hours, with all sorts of things." SC10SP1*
>
> *"And indeed the managers do listen to you, the ones that I report to. If I see, you know what, I don't want to be in this, I want to move, they will make a plan." TL5SP1*
>
> *"They give people opportunities to grow and to challenge and give their input." CT5SP2*
>
> *"You will feel that the company looks after you." CT9SP2*

In response, organizational members see the organization as supportive and nurturing. For instance, individuals commonly use a *'family'* metaphor to describe the organization, or refer to the organizational *'DNA'*, alluding to an unavoidable and close relationship among organizational members.

> *"So I find it a very nurturing organization. I do find it's a bit of a family." SC8SP1*
>
> *"I've got a natural affinity, I don't know, for the organization. Sort of, so in that sort of way it's in your DNA. It feels almost as if, I've worked elsewhere, I've come home."SC10SP1*
>
> *"The interactions always made you sort of part of the family." CT3SP2*
>
> *"I think [the Organization] is a good company. I feel at home here. I feel at home." CT5SP2*

Coupled with the *'family'* view of the organization is the importance afforded to the establishment and maintenance of relationships among organizational members. Some even see relationships as playing a more vital role than individual competence in organizational activities.

> *"What's actually important I believe in this business, and what has made it successful, is its ability to manage relationships, at many levels. So what that actually brings to pass is a very strong focus on these relationships to actually get business." CT7SP2*
>
> *"The nice thing for me about [the Organization], it's a game of relationships." CT8SP2*
>
> *"Some people are viewed higher than what other people are, purely because they have a better relationship than what they have with managers " CT5SP2*

This positive view of the organization from most organizational members contributes to a staff complement where most members have long service records.

> *"I don't know if you saw it, [retiring employee] that works here, you may know who he is, in IT, retiring after 39 years of service. I think it's 39, either 36 or 39 years." CT5SP2*
>
> *"Because if you look at it, people on average stay here 20, 22 years, 25 years." CT9SP2*

The long history of the organization and the long service of many organizational members have had an effect of entrenching certain values and practices into organizational life. For instance, organizational members speak of *'The [Organization] Way'*, while organizational practices and norms established decades

previously, like a deference to authority and standard practices and a leadership style that does not encourage collaboration, are well entrenched in certain areas.

> *"I can live the [Organization] brand; I can live 'The [Organization] Way'." CT3SP2.*
>
> *"There is a lot of respect. It talks to 'The [Organization] Way' and the values that we have, about respect, integrity, you know allowing people to voice their opinions around anything." CT5SP2*
>
> *"There are still some sorts of pockets of culture that remember that very strict authoritarian environment where you don't speak if you are not a senior manager." SC7SP1*
>
> *"I think there is an underlying, almost DNA in the organization that it's quite structured, and don't try break the structures. Don't try beat the (?), there's structures you go through and you follow those structures. And that's how it works, you know. Don't argue about it, just do it that way, and you will be fine." SC8SP1*
>
> *"There's in some areas a very, which I want to call an old mentality, which is I make the call, I do it this way, and this is the way it is." SC10SP1*

Besides being one of the oldest companies in the industry, FinSect has also been the market leader for over a decade and has received numerous accolades throughout its history. These achievements over many years are a source of pride for organizational members and a position they strive to maintain. Pride in achievements is further evidenced by the use of certificates of awards as the only form of decoration in many meeting rooms, and surprisingly, the listing of achievements on public web pages that describe the history of the company logo. Mention of organizational achievements also features prominently in organizational documentation.

> *"So, the fact that [the Organization] has been positioned internally and externally as the leader in the industry, and at that a successful leader, gives people a sense that, well, we need to live up to that."SC7SP1*
>
> *"They, [the Organization] tries hard to be out there and still have the edge, and try to be sort of, a leader, the one to be followed." TL4SP1*
>
> *"Room decor - The only wall decoration is certificates of recognition and awards." MN Comment - Steering Committee Meetings*
>
> *"Awards are listed on the web pages that describe the history of the logo." Memo - Industry Awards*
> *"Over almost 10 decades, we've received numerous accolades… Wow the industry and lead the market in terms of performance and service." CD 2017-02-07 09.23.32_Page_2*

Being a part of these achievements leads organizational members to believe they represent the best talent in the industry.

> *"We have the best people in the industry." SC1SP1*
>
> *"So we do have the best expertise in the business." SC5SP1*
>
> *"We bring in, in my view, smart people, not all of them, most of them." SC2SP1*

The focus on achievements is coupled with an emphasis on *'excellence'* as a core organizational value. Besides the statements from organizational members, there are further reminders of the need to excel through the numerous posters and signage positioned throughout the head office buildings and in organizational documentation.

> *"There's a strong focus on excellence, on performance." SC7SP1*

"They advertise that they've been the company of the year over the last 10 years quite a number of times." CT9SP2

"Do [our business] with excellence." 2017-02-07 09.23.32_Page_2

"We're doing business with integrity, excellence, passion, innovation and humanity by also taking care of those closest to us" 2017-02-07 09.16.37_Page_1

Concomitant with the organization's prestigious standing in the industry and the concern for excellence is a low tolerance for mistakes and reluctance among organizational members to communicate bad news. Organizational members thus seem to mitigate the personal reputational risk associated with making a mistake by engaging in collective decision making as a means of sharing accountability.

"People feel that if they slip up, there's going to be consequences." CT5SP2

"You mustn't sell fear; you must sell comfort to the client. I said, but I'm just telling them the facts that's on the table." CT6SP2

"There is collective decision making at a senior level, which means that nobody is right or wrong." CT4SP2

"We tend to be very careful. We want to consult a bit more with other people, before we actually make it. So people are not willing to put their head on a block." CT5SP2

5.5 Within-case Analysis - Kindle

This section describes the within-case analysis of the Kindle data.

5.5.1 Themes in the Kindle Data

The themes and sub-themes that emerged from an analysis of the Kindle data, and the initial codes that were identified, are illustrated in Figure 27. Two themes and ten sub-themes were identified. The theme ***Cultural Contradictions*** aggregates four sub-themes; *Technology Contradictions*, *Vision Contradictions*, *Value Contradictions* and *Process Contradictions.* The theme ***Processes of Performing*** aggregates three sub-themes; *Defining Success*, *Working at Being Best* and *Assessing Achievements*. The *Working at Being Best* sub-theme further aggregates three additional sub-themes; *Leading*, *Dealing with Challenges* and *Enacting Agency*. A number of codes were also identified and subsequently discarded in respect of further analysis. Thus, while *Seeking Alignment* represents a cluster of meaning and aggregates the codes *Adjusting Processes, Collective Decision Making* and *Adjusting Behavior*, as does *Making Sense* which aggregates *Using Symbolism* and *Creating a Vision*, these were considered less relevant to the research topic and research questions and excluded from further analysis. The themes and sub-themes are therefore the focal points of the discussion and theorizing in the sections that follow. The aggregation of candidate themes associated with the themes and sub-themes is described in attachment 9.6.

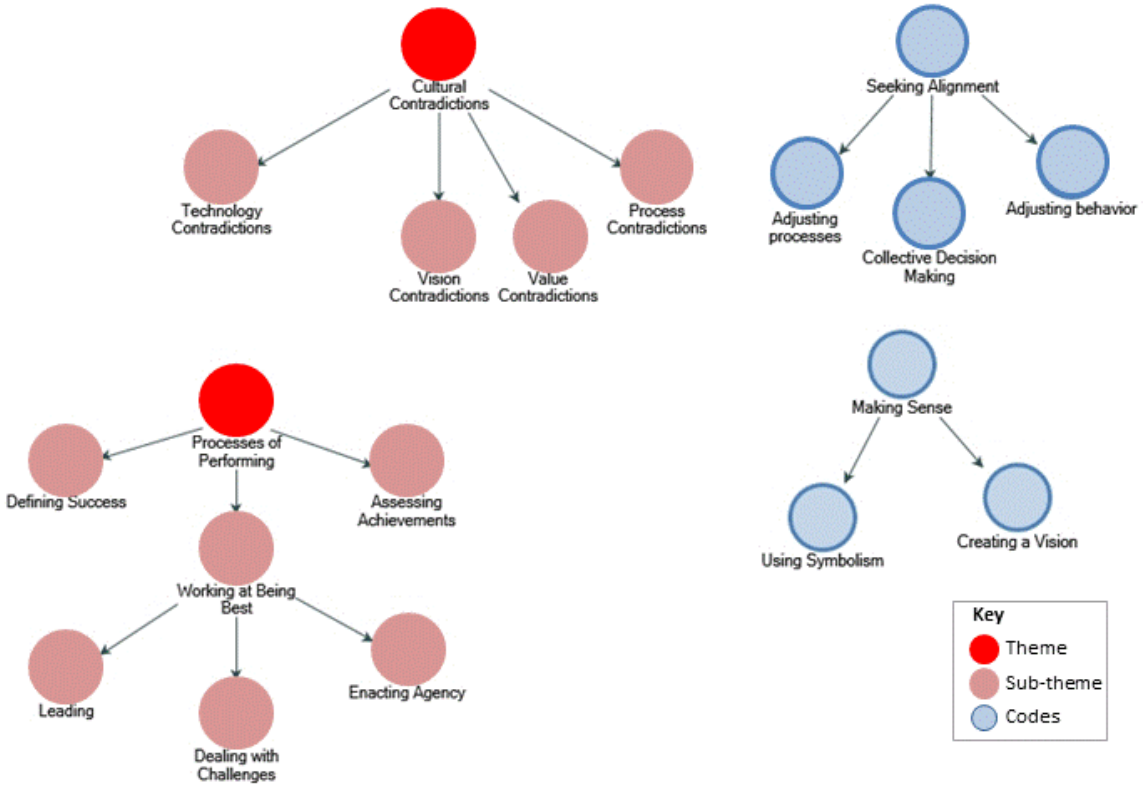


Figure 27. Themes, sub-themes and codes in the Kindle data

5.5.2 Relationships between Themes in the Kindle Data

The interdependence of themes in the Kindle data is illustrated in the theme / sub-theme hierarchy (see Figure 27) and also by relationships uncovered in the data. Relationships in the data were identified during the analysis and coded using NVivo '*Relationships*', as described in detail in section 5.3. A sample of the relationships and associated data is provided in Table 13 as an example. The full set of relationships and associated data is included as attachment 9.10.

Relationship	Name	Coded Text
Cultural Context challenges Working at Being Best	SC1SP1	And I think that's where our culture impacts our projects. So we have a very optimistic view on our estimates, because you know we can do everything and anything, and it's not going to take that long. Almost always we find that we have under estimated complexity, and we are underestimating the effort.
Cultural Context creates Cultural Contradictions	SC9SP1	Very strong business people in the beginning phases that had a very set way in how things should work in the new world, which had a carryover from their legacy experience.
Defining success contextualizes Assessing achievements	SC4SP1	I believe we've been very successful in terms of the business adoption of the system. Maybe, the cost of implementation was not that successful, but that's a different matter.
Working at Being Best creates Cultural Contradictions	SC2SP1	I don't always think they tell us everything they know. They don't lie, I'm not saying that, but they know things, and if we don't ask in the Steerco, they won't say. They won't offer the information. I think they want to showcase that they are doing a good job, and they are successful, you know and don't worry about us.

Table 13. Extracts of relationship coding and associated data for Kindle

A mapping of the relationships between themes and sub-themes coded in the data is illustrated diagrammatically in Figure 28 using NVivo Pro '*Project Maps*'. The diagram illustrates that the ***Cultural Context*** provides norms for how individuals and groups should accomplish *Working at Being Best* and for how *Assessing Achievements* should be performed. *Assessing Achievements* in turn is contextualized by both ***Cultural Contradictions*** and *Defining Success*. The diagram also shows the bi-directional nature of many of the relationships; the ***Cultural Context*** challenges *Working at Being Best*, and *Working at Being Best* in turn challenges the ***Cultural Context***, *Working at Being Best* creates ***Cultural Contradictions*** while ***Cultural Contradictions*** in turn challenge *Working at Being Best*. Similarly, the ***Cultural Context*** creates ***Cultural Contradictions*** while *Cultural Contradictions* change the ***Cultural Context***.

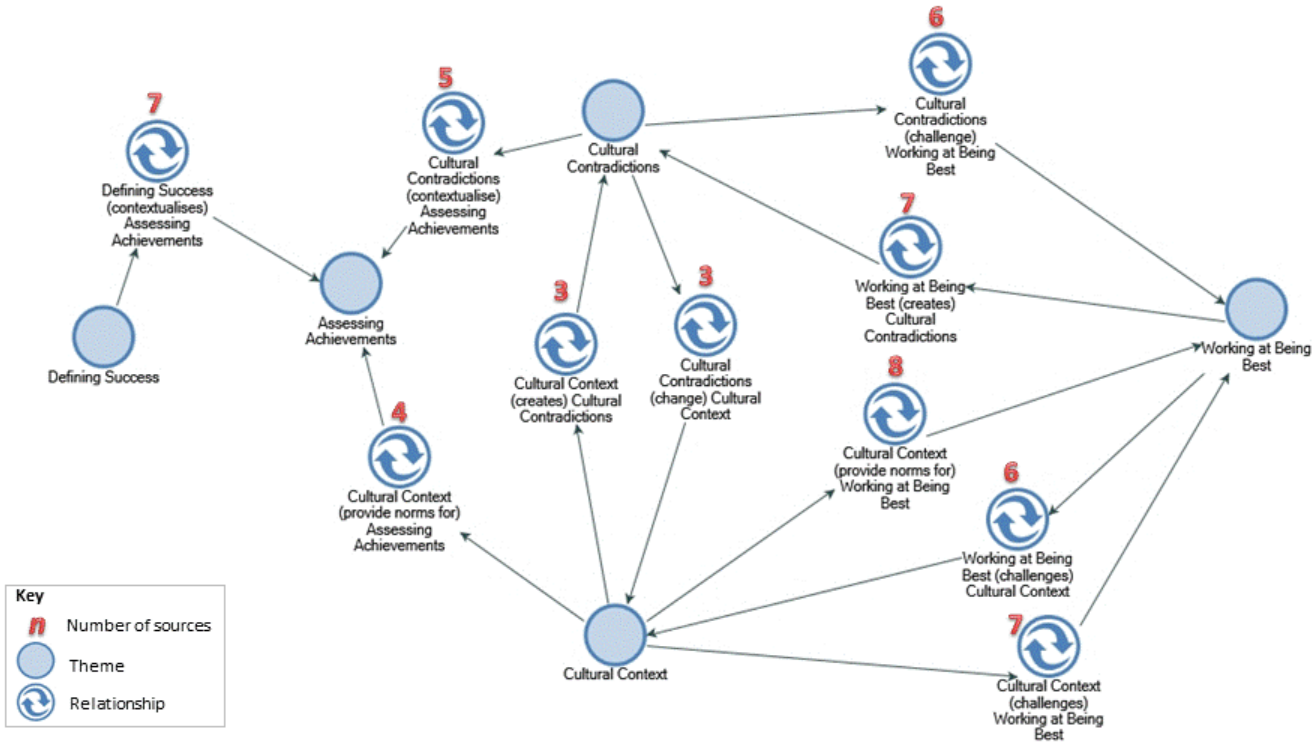


Figure 28. Relationships between the themes in Kindle

5.5.3 Conceptual Model of the Themes and Relationships

The analytic process followed so far allows the construction of a conceptual model of the pertinent themes and relationships uncovered in the data. This model is illustrated in Figure 29.

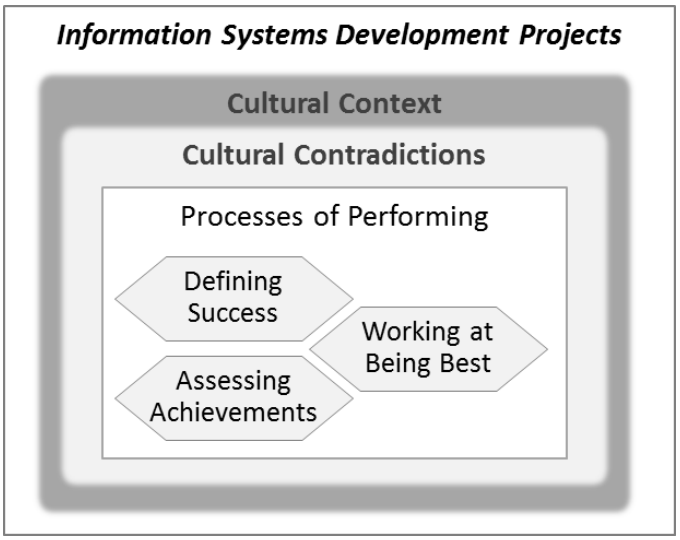


Figure 29. Conceptual model following thematic analysis of Kindle data

The conceptual model illustrates how the ***Cultural Context*** provides a context for ***Processes of Performing*** during IS development. In this sense, culture acts as a '*tool kit*' (Swidler, 1986) containing a stock of assumptions, values, beliefs and practices from which individuals selectively draw in order to make sense of situations and choose paths of actions (Benford & Snow, 2000). Thus culture plays a role in the framing process, by providing the resource base from which new frames are constituted, as well as a lens with which to interpret different framings (Benford & Snow, 2000). ***Cultural Contradictions*** in contrast, reflect the ongoing impact on organizational members of the different frames of reference used by individuals and groups to make sense of situations that arise during IS development. In this respect, ***Cultural Contradictions*** provide cues to the existence of alternate framing in use by different social groups.

The model further illustrates the central organizing theme in IS development activities, ***Processes of Performing.*** This interpretive concept has three sub-themes or second-order interpretive concepts; *Defining Success*, *Working at Being Best* (*Leading*, *Dealing with Challenges*, *Enacting Agency*) and *Assessing Achievements*. These second-order concepts represent the dominant concerns of organizational members as they go about their business of implementing an IS solution. It is thus posited that these second-order concepts constitute the core domains of the frames used by individuals in performing their duties; their performing frames. Each component of the conceptual model is discussed in further detail in the sections that follow.

5.5.4 Interpretive Theorizing

The conceptual model forms the basis for the further interpretive theorizing that follows. Two concepts in the conceptual model contextualize ***Processes of Performing; Cultural Context*** and ***Cultural Contradictions. Cultural Context*** has been discussed previously in section 5.4.1. This section first presents an analysis of ***Cultural Contradictions*** in the Kindle data. Thereafter, frame analysis is used as a theoretical lens for further analysis of the ***Processes of Performing***. The concepts that comprise ***Processes of Performing***, *Defining Success*, *Working at Being Best* (*Leading*, *Dealing with Challenges*, *Enacting Agency*)

and *Assessing Achievements* provide the frame domains or specific knowledge areas (Orlikowski & Gash, 1994) of relevance to research participants as they go about the business of IS development. Two social groups were identified for the analysis, 'Organizational Managers' and 'IS Development Team' (the identification of these two groups is discussed in section 4.3.3 and the composition of the groups is described in Table 12). The section is concluded with an analysis of the frame domains of each of these social groups in Kindle.

5.5.4.1 Cultural Contradictions

Cultural Contradictions arise in social interactions as a consequence of different stakeholders, both individuals and groups, holding different values, beliefs, norms and practices that emanate from the unique ***Cultural Context*** of each. ***Cultural Contradictions*** also arise through a mismatch of the values embedded in different levels of culture and the values embedded in technology. Importantly, ***Cultural Contradictions*** represent the differences that make a difference to the efficiency or effectiveness of social interactions. Thus ***Cultural Contradictions*** reflect the ongoing influence of different frames of reference used by individuals and groups to make sense of situations that arise during IS development. In this sense, ***Cultural Contradictions*** are a constitutive component of the contextual environment of IS development and can serve as cues to the alternate framing of situations by different social groups. The theme ***Cultural Contradictions*** aggregates the sub-themes *Value Contradictions*, *Process Contradictions*, *Vision Contradictions* and *Technology Contradictions*, as illustrated in Figure 30. The sub-themes are further described and related to relevant idiographic data for each of the two social groups in the sections that follow.

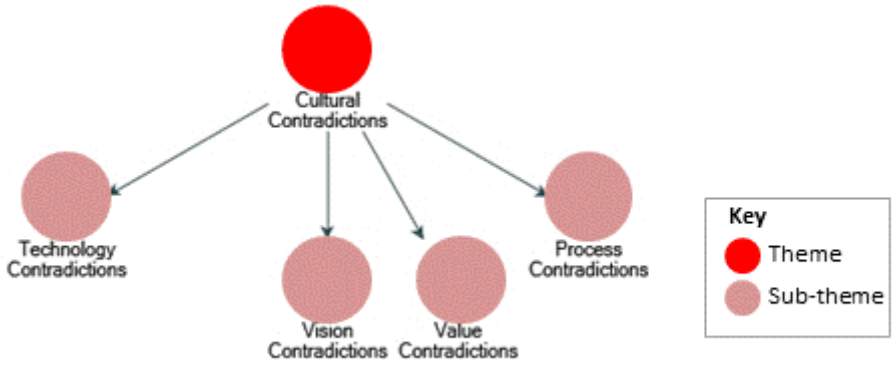


Figure 30. The theme 'Cultural Contradictions' with sub-themes for Kindle

5.5.4.1.1 Vision Contradictions – *Organizational Managers*

Vision Contradictions illustrate the misalignment of the goals of different stakeholders involved in organizational operations. Senior managers in the organization recognize the importance of vision alignment to the achievement of organizational goals.

"So, clear direction, number one." SC8SP1

> *"There's also a lot of sense in making sure that when we agree on something that has gone through the proper control processes, and that there's alignment across the business in terms of what should be done now, and what should be done later, and what should not be done, and what should be done.. " SC4SP1*

However, the organization still experiences misalignment between the organizational strategy and operational activities causing conflicting strategies in different organizational units.

> *"I think we've got a slight disconnect with strategy, and our vision and where we want to be, and what is in the portfolio, and what we are delivering. I see on one hand a lot of things is happening, operational stuff, while the message is we need to do less." SC10SP1*

Alignment of vision is further threatened by the complexities inherent in IS development. Complexity creates difficulties in clearly articulating a vision, causing project stakeholders to have different interpretations of what the final IS solution should look like.

> *"The one thing that we were told up front is that we just building like for like. What you had in the old system, you'll have in the new system. Nothing more, nothing fancier. But that we never got. We didn't get like for like, we got less." SC2SP1*

> *"So much of what we do is not visible. You know, we are not building houses here. I can't build you a perfect model, show you the house, and you can say this is exactly what I want. And I think for some executives that complexity is understandable, and for others it's just very hard to get to grips with." SC1SP1*

5.5.4.1.2 Vision Contradictions – *IS Development Team*

Vision Contradictions also illustrate the misalignment of the goals of different stakeholders involved in IS development activities. For the IS development team, achieving alignment amongst stakeholders is recognised by some as an important contributor to team performance.

> *"If people understand what we are all trying to achieve, and what everyone's role is in achieving that, and if I help my neighbor then we all reach the target, that's what gives us the kick." SC9SP1*

However, the vision of senior managers is not always understood or supported, raising questions from IS development team members.

> *"We said now, they have a strategy, they want to grow business, they want to start growing the direct channel, everybody, all the exec support them, but back at home, you are like, what the hell are you thinking." SC6SP1*

5.5.4.1.3 Value Contradictions – *Organizational Managers*

Value Contradictions arise from different value systems held by individuals and groups. In the organization the emphasis on financial gains challenges organizational values regarding the importance of people.

> *"We don't easily approve a business case if the benefits are airy fairy. To say client service will go up, staff will be happier. You know, those things." SC2SP1*

> *"And as a result of that cost cutting, it's ruthless. They are ruthlessly cutting costs, and the biggest threat is that they are going to lose the best people they have." SC5SP1*

In the IS development context, the misalignment of values creates different perspectives among stakeholders regarding where the focus of IS development activities should be. Meeting delivery commitments is a high priority for some, while others put priority on delivery of the promised solution.

"So we are now doing everything we can to make it succeed, to try and fit in with the timeline. So we are having to cut, cut, cut, to meet the timelines." SC5SP1

"The Kindle team was so focused on delivering what they had to deliver, that they at times lost track with reality. So, sort of find ways to just get this thing through, instead of understanding what the impact will be on the business." SC2SP1

Similarly, organizational values like *'excellence'* creates specific challenges in the IS development context. Some organizational members believe the solution should be perfect before it is delivered, while others believe a working solution should be delivered with improvements coming later.

" ...recognize that fact that you don't always have a watertight, perfect view of the world. That you need some level of iteration that ultimately drives the best outcome." SC7SP1

"Get it working as soon as possible, that you are starting to use it. And not search for perfection before you start using it." SC8SP1

5.5.4.1.4 Process Contradictions – *Organizational Managers*

Process Contradictions describes the differences in work practices that arise from different assumptions, beliefs or values held by individuals or groups. *Process Contradictions* can arise through a need to adjust organizational procedures to meet specific IS development requirements. For instance, adjustments to existing governance procedures were necessary to accommodate the use of an agile software development methodology rather than the more common waterfall approach in the organization.

"...governance structures are put in place. Now we try to make those governance structures fit for purpose, and have been willing to amend them as we needed to in terms of what we were looking for." SC7SP1

Adjustments to broadly accepted procedures require acceptance and new thinking at multiple levels within the organization. Thus while the agile methodology has been generally well received by stakeholders in the IS development context...

"...the Agile methodology has helped us quite a lot..." SC7SP1

"...maybe there the Agile methodology worked better than a waterfall kind of approach, so that you learned as you go along." SC4SP1

... this is not the case in other areas in the organization. These different views of how IS development should be practiced create conflict among different individuals and groups.

"That's what we said to everybody, but in practice we have a waterfall culture. So we are stuck in our waterfall state of mind at an executive level. Yet we are doing an agile approach. We are using an agile approach. And that creates huge conflict with all the people who are involved, you know. And that's why the project, it fails." SC5SP1

"So we've really been battling on this side to entrench the agile mindset and approach, the method. Um, there's a layer of understanding that's missing." SC10SP1

Other conditions pertaining in IS development can create *Process Contradictions.* The pressure to meet delivery commitments is particularly important in Kindle, resulting in the need to adjust standard organizational practice. For example, the necessity for quick decisions forced a changed approach to decision making in the project environment.

"We had to make a very specific decision and say you know we cannot have consensus driven decision making. It touches the entire organization, so every time you are going to consult with all these many people, and we said it's just not going to work. It's too time consuming." SC1SP1

5.5.4.1.5 Process Contradictions – *IS Development Team*

Within the development team, *Process Contradictions* describes the differences in work practices that arise from the adoption of an alternative software development methodology and the recognition from team members that they stand apart from the rest of the organization.

"So Kindle has always been exempt in terms of the way we work with the Agile manifesto, and the story cards, and even the tool and where we store our documentation. It's very much disconnected from the Head Office." SC6SP1

5.5.4.1.6 Technology Contradictions – *Organizational Managers*

Technology Contradictions describes the different beliefs and assumptions about technology that has a bearing on how technology is accepted, implemented and used. *Technology Contradictions* can result from a gap in the degree of fit between the nature and functionality of the IS solution and the experience or expectations of organizational stakeholders. For example, the procurement of a North American product proved to be a problematic fit to the South African context, as did the conversion from a custom built IS solution, to a package solution.

"Although [the IS solution] is the most reputed system that there is in the industry, the South African product set is very different." SC7SP1

"We've had this kind of like-for-like debate, but like-for-like is never really a reality if you are moving off the mainframe onto a package." SC1SP1

5.5.4.1.7 Summary of Cultural Contradictions

This section summarizes the ***Cultural Contradictions*** that exist for the two social groups in Kindle. The analysis reveals *Vision Contradictions*, *Value Contradictions*, *Process Contradictions*, and *Technology Contradictions* among the organizational managers. The IS development team show evidence of only *Vision Contradictions* and *Process Contradictions*. The summarized findings with related extracts from the idiographic data are illustrated in Table 14.

Cultural Contradictions	**Organizational Managers**	**IS Development Team**
Vision Contradictions - *Alignment of vision* - *Achieving alignment*	Alignment is necessary. *"...a lot of sense in making sure that... ... there's alignment across the business..."* Alignment is not always achieved. *"...we've got a slight disconnect with strategy, and our vision..."*	Alignment boosts team performance. *"If people understand what we are all trying to achieve... ...that's what gives us the kick."* Alignment is not always achieved. *"So much of what we do is not visible... ... it's just very hard to get to grips with"* *"We didn't get like for like, we got less."*
Value Contradictions - *Financial measures* - *Excellence*	Financial benefits take precedence. *"We don't easily approve a business case if the benefits are airy fairy."* Delivery commitments take precedence. *"...sort of find ways to just get this thing through..."*	

Cultural Contradictions	Organizational Managers	IS Development Team
	Applying meaning to *'excellence'*. *"... you need some level of iteration that ultimately drives the best outcome."* *"...and not search for perfection before you start using it."*	
Process Contradictions - *Agile vs Waterfall* - *Customized practices* - *Time pressures*	Resistance to agile software development method. *"...in practice we have a waterfall culture. So we are stuck in our waterfall state of mind at an executive level."* *"...battling on this side to entrench the agile mindset and approach"* Customized practices. *"...we try to make those governance structures fit for purpose"* Time pressures. *"We cannot have consensus driven decision making. ...it's just not going to work. It's too time consuming."* Acceptance of agile software development method. *"...the Agile methodology has helped us quite a lot..."* *"and maybe there the Agile methodology worked better than a waterfall kind of approach"*	Customized practices. *"So Kindle has always been exempt in terms of the way we work... ... It's very much disconnected from the Head Office."*
Technology Contradictions - *Degree of fit*	Fit with business requirements. *"...the South African product set is very different."* Fit with existing systems. *"...like-for-like is never really a reality if you are moving off the mainframe onto a package."*	

Table 14. Summarizing the 'Cultural Contradictions' in Kindle

5.5.4.2 Performing Frames

The conceptual model (see Figure 29) illustrates ***Processes of Performing*** as the central organizing theme of individuals and groups as they go about their IS development duties. ***Processes of Performing*** captures a pervasive expectation among organizational members that excellence is important. This expectation has as its foundation the organization's dominant leadership position in the industry, the numerous awards and accolades the organization has achieved, repeated reminders of how the organization values excellence and organizational support for advancement of its members. This section explores how ***Processes of Performing*** plays out amongst organizational members as three performing frames; *Defining Success*, *Working at Being Best* and *Assessing Achievements* (see Figure 31). Following the conceptualization of technological frames by Orlikowski and Gash (1994), performing frames are conceptualized as the subset of organizational frames that encapsulate the assumptions, beliefs, norms and knowledge used by organizational members to understand how they should approach the events and

situations that arise during IS development. Effectively, the performing frames define the set of interpretive schemes and practices used by individuals to perform their IS development duties in their specific context. The performing frames are described and related to relevant idiographic data for each of the two social groups, in the sections that follow.

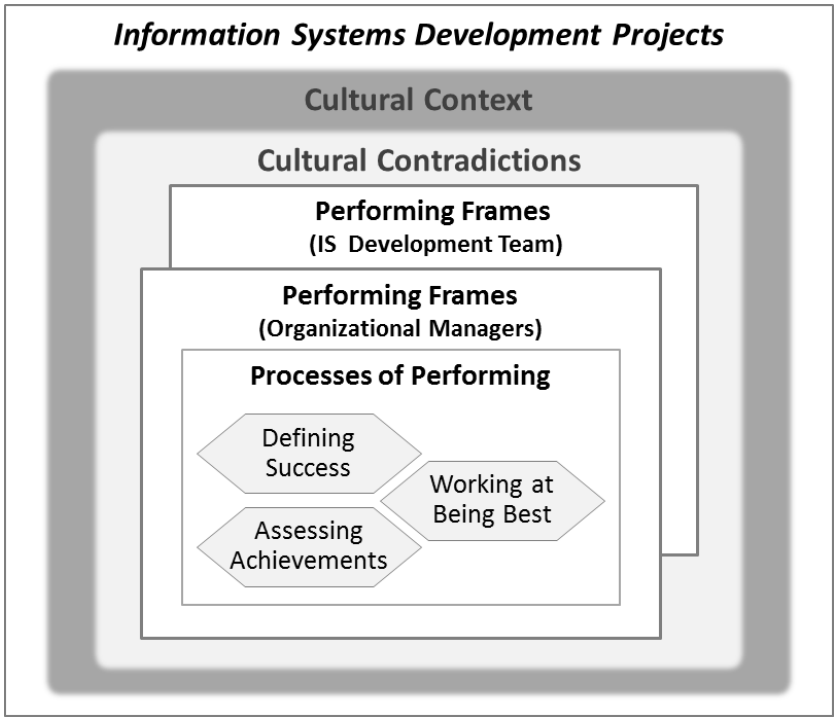


Figure 31. Performing frames

5.5.4.2.1 Defining Success Frame – Organizational Managers

The *Defining Success* performing frame explains the elements in the cultural tool kit organizational managers consider important and salient criteria for benchmarking future performance, and how these are used to frame what success means to them. In day-to-day operations, executives and senior managers recognize that the organization is primarily concerned with growth and profitability measures and hence place priority on short term financial gains for performance measurement. Organizational managers thus frame organizational performance as the achievement of these performance metrics.

> *"I think it is about growth, and cost reduction, and that's what will be measured. That is the focus." SC10SP1*
>
> *"Everything's kind of measured, and unless you talk numbers, actually you are wasting my time." SC1SP1*

Concern for growth and profitability remain important in the way success is framed in the context of the IS development initiatives. However, additional considerations relevant to the inherent uncertainty that accompanies the implementation of new technology are now included in the framing of success. For instance, there is also consideration of factors relating to business continuity, or to the adoption of the new technology.

> *"… we had no loss of business,…" SC7SP1*

"It's actually, if I look at [the opposition], they moved to a different system, they fell over. We didn't have that. So I think it was a very, very successful from that perspective." SC2SP1

"I believe we've been very successful in terms of the business adoption of the system." SC4SP1

5.5.4.2.2 Defining Success Frame – IS Development Team

The *Defining Success* performing frame describes how IS development team members draw on their cultural tool kit to identify important and salient criteria against which their future performance will be assessed. IS development team members recognize that standard measures like time, cost and quality are important to some stakeholders.

"But you might end up at an executive steercom where half the people say well look at this thing, you now 12/13% over budget." SC9SP1

However, this is not the primary consideration of these individuals. For the development team, meeting client requirements is more important.

"They don't want to go back to the old ways of doing things. So that to me is a huge success." SC6SP1

Additionally, the adoption of the agile software development methodology is considered an important criteria for success and takes precedence over time, cost and quality measures.

"We kind of really embraced almost, the agile ethos. Which is very collaborative. And it's not a, we set a plan and then at all costs, like a steam train, this is what we try to do." SC9SP1

5.5.4.2.3 Working at Being Best Frames

The *Working at Being Best* performing frames (see Figure 32) describe why individuals and groups choose particular cues and guidelines from their ***Cultural Context*** and how these come to guide their subsequent action. The ***Cultural Context*** is a powerful contributor to shaping the meaning inherent in *Working at Being Best*. The success of the organization, its' belief in the exceptional talent of organizational members, its' history of having a low tolerance for mistakes and its' expectation of excellence creates a working environment where nothing short of the best is acceptable. *Working at Being Best* has three distinct performing frames that each focus on different aspects of doing IS development work while encapsulating this understanding of the need to be best. In effect, *Working at Being Best* is the aggregation of these three distinct performing frames; a *Leading* frame, a *Dealing with Challenges* frame and an *Enacting Agency* frame. Consequently, further analysis of the *Working at Being Best* frame is achieved through a detailed analysis of the *Leading*, *Dealing with Challenges* and *Enacting Agency* frames. Each of these performing frames is described now in more detail, and related to the idiographic data.

Figure 32. Working at Being Best performing frames

a) Leading Frame – Organizational Managers

The *Leading* performing frame describes what components of the ***Cultural Context*** are most relevant to organizational managers to guide their leadership actions. A long legacy of autocratic management in the organization provides an important cue for many organizational managers and acts as an influential factor in shaping subsequent leadership action. From this historical point of view, those higher in the hierarchy make the decisions, while those at lower levels do as they are told.

> *"To get input, and to be listened to and to be heard. In some areas I don't observe that." SC10SP1*

Senior managers new to the organization, not as entrenched in the organizational history and with exposure to alternative leadership approaches are more likely to frame leadership behavior in a context that supports collaboration and the empowerment of organizational members.

> *"Most people I hope experience themselves as empowered if they are capable and they have to do a job of work." SC7SP1*
>
> *"There's openness for people to challenge, I never get the sense that you cannot say something, you are actually encouraged to have an opinion." SC10SP1*

Importantly, the approach to leadership adopted by senior organizational members has an influence over the framing of leadership from those lower in the hierarchy. One manager describes this ripple effect:

> *"You know for me what is noticeable, is how behaviors run through the structure. It's funny how the behaviors just ripple through. It does ripple down." SC10SP1*

The framing of leadership behavior in the organization also takes cognizance of the importance placed by the organization in its people. Leaders frame their leadership actions in the context of how their actions will affect organizational members and customers. Thus consideration is given to the relative importance of people versus meeting organizational objectives.

> *"There's a strong focus on excellence, on performance, at the same time recognizing the value of people. That we are there for people, we exist for people." SC7SP1*

This need to balance a concern for people with getting the job done can create a misalignment in the framing of leadership between organizational managers. As one senior manager explains:

> *"I find most of the time that I personally struggle with is huge emphasis on numbers. It's all about the bottom line. It's not about the people. Is humanity really a key value that we live, even though we put it on the wall?" SC1SP1*

This frame misalignment is further demonstrated when situations arise where meeting organizational requirements becomes imperative. In these instances, the balance between meeting commitments and concern for people shifts in favor of meeting organizational objectives.

> *"I must also say there's also not a lot of tolerance for people not pulling their weight. There's tolerance, but not a lot." SC3SP1*
>
> *At [the Organization], we are practical and pragmatic, in that if you have a square peg in a round hole, we do something about it." SC7SP1*

Leadership actions are also framed by the importance of internal and external relationships in everyday business. The successful management of relationships is credited for organizational success to the point where relationships are considered imperative for getting work done.

"Our key success factor… it's the brand and the historical relationships that we have. So, they would rather work with you to address the issues, then moving on to someone else. So those relationships are fairly key." SC4SP1

"What I wasn't used to, was that relationship takes precedence over everything else." SC5SP1

"You can't deliver without relationships in [the Organization]. It's quite deeply in the DNA in how you get stuff done." SC10SP1

The framing of leadership in the IS initiatives is in contrast to the leadership approach in the rest of the organization with respect to support for collaboration and empowerment. Here, leaders prioritize the complexity and novelty of the undertaking as more important than the organizational legacy and general practice when framing their leadership approach, and a collaborative style of leadership is apparent.

"If you want something big and complex to be done, take a pile of people out, go lock them up in a room, and tell them to come out when they've done the job. Don't let them be interfered with by all that happens in a corporate game." SC8SP1

"It's one of these projects that you can't run the project on its own, and then come and give us something to implement. It was an integrated approach, which I think worked." SC2SP1

"It's given the space for business people to actually say no. I'm not happy, we are not moving forward, because this and this and this hasn't been dealt with." SC7SP1

b) Leading Frame – IS Development Team

The *Leading* performing frame describes which cultural resources IS development team members use to understand leadership actions in the IS development context, and to adjust their own behavior accordingly. The size and complexity of the IS initiative has necessitated that some organizational norms be set aside in favor of others more supportive of the nature of the work.

"I believe you can't always just fit into the broader corporate structure of a corporate like this." SC8SP1

"We created a new project structure called a Transformation Committee. And that has been really instrumental in our leading the process of moving such a complex new set of tools into the business environment." SC7SP1

"Now we try to make those governance structures fit for purpose, and have been willing to amend them as we needed to in terms of what we were looking for." SC7SP1

Thus leaders in the IS development team have a cultural tool kit that has components not necessarily a part of the tool kit of other units in the organization. These leaders place this prevailing context before organizational norms in deciding appropriate courses of action.

"We've not been dictated to from outside, around you will produce this documentation and follow this process. I think that gives you a big productivity boost if you don't have that kind of overhead." SC9SP1

"So, I think that's probably one of the most enjoyable parts of my work, is we've figured it out ourselves. No one tells us how to do it." SC9SP1

The novelty of the Kindle context necessitates the use of slogans and signage by the leaders to draw the attention of the IS development team to the values that are particularly meaningful in their context and not necessarily aligned to conventional organizational values.

"So we had all these mantras that we drove…" SC7SP1

Additionally, the IS development team draws on principles inherent in the agile methodology for cues on how to frame leadership. For instance, the team members recognize that collaboration, a key principle in the agile methodology (Beck *et al.*, 2001) is of more value than adherence to governance procedures.

> *"And the thing that to me is pleasing is that they put that, we put that plan down together. We went through days and days of collaborative planning, trying to understand what lies underneath, and everyone came to the party." SC9SP1*

Aligned to the attention paid to collaboration in framing leadership activity is the attention paid to building and maintaining relationships. This is important in the framing of leadership and is illustrated is discussions and in the use of posters in the office that draw on the *'family'* metaphor to reinforce the importance of relationships.

> *"It's about relationships. So I spend, still spend a lot of my time to make sure all the relationships keep on going." SC9SP1*

c) Enacting Agency Frame – Organizational Managers

The *Enacting Agency* performing frame describes how organizational managers refer to their own power and capacity and the inherent culture in technology to guide their leadership choices and actions. This technology culture manifests as perceived inherent values and capability built into the technology solution (Leidner & Kayworth, 2006; Waring & Skoumpopoulou, 2012). For instance, organizational managers use the culture embedded in the new technology solution to provide cues and guidelines for decisions on the role the technology will play in their business operation.

> *"My staff needs to become more of, less technical in a sense from a [specialist] perspective, but more in terms of IT configuration, changes on the system." SC4SP1*

Organizational managers also recognize that they can use their authority to manipulate the technology in ways that suit their existing business practices.

> *"We run the risk if I'm in my role, been in the place for 20 years, I'll adapt the system to my way of working, rather than seeing how we can adapt better to the system." SC4SP1*

This manipulation of the technological environment is also used in more subtle ways. For instance, leaders recognize how agency embedded in technology development practices can contribute to fulfilling certain leadership functions. Senior managers used principles inherent in the agile development methodology to frame their expectations of leaders. Particularly, collaboration and the empowerment of individuals represent a departure from conventional practice in the organization.

> *"Where the Agile methodology has helped us quite a lot in the Kindle environment, is that there are certain expectations of leaders that are built into the methodology." SC7SP1*
>
> *"And then I think it's the fact that everyone has got a voice, in the form of the scrum, and leadership sort of comes from within, it's not top down." SC10SP1*

d) Enacting Agency Frame – IS Development Team

The *Enacting Agency* performing frame describes how IS development team members use the inherent culture in technology to frame situations that emerge during IS development activities. For instance, IS developers blame the need for a large portion of redevelopment they face on the failure of

organizational managers and some technical specialists to recognize the inherent capability of the technology solution.

> *"The product owner was so set in their way. This is what we have, we want exactly that. So that's where we flawed." SC6SP1*
>
> *"In that the way the system was designed, configured, they used this concept of exception tables …. And now we are trying, we are rectifying that. That is a mistake in some way, that we made." SC8SP1*
>
> *"My gut feel, what I hear is, I wonder if less than half of the package is still uncustomized. I think most of it we've re-written." TL4SP1*

Enacting Agency framing includes the inherent culture in software development methodologies. For instance, the agile methodology includes principles of interaction and collaboration (Beck *et al.*, 2001), values not considered important in the waterfall method. Consequently, some development team members used a more collaborative approach to IS development than what people were accustomed to...

> *"We kinda really embraced almost, the Agile ethos. Which is very collaborative." SC9SP1*

... leading to conflict with others who framed development activities in the context of a waterfall methodology.

> *"We are using an Agile approach. And that creates huge conflict with all the people who are involved, you know." SC6SP1*

The status of specialist areas can be affected by an *Enacting Agency* frame when the capability inherent in the technology influences the framing of who should make technical decisions. Decisions regarding the look and feel of the new user interface moved from the specialist area responsible for formulating business rules to the contact center servicing the client, effectively reducing the power over the technology solution previously enjoyed by the specialist area.

> *"And every time we said, [business area], you don't own the UI, the contact center own the UI. So you can prescribe what the rules are, whatever, but the contact center sign off on the UI." SC6SP1*

Similarly, the introduction of the new technology changed the framing of what specialist skills were important in the IS development team. A lack of skills important in the context of the new technology changed the status of those who were experts on the old technology.

> *"The feeling was, you're on the mainframe, you know nothing. You are old school. This is the new world, and you can't do SQL, or whatever, so you won't understand." TL4SP1*

A change in the framing of required and important skills also affects end users of the new technology. Old skill sets may no longer be appropriate and new skills need to be acquired. This shift in the framing of the relevance of skills changes the priority of development activities like change management and training interventions.

> *"I'm going from a green screen application where its function driven into a, you are free to go unstructured process. It's a big cultural shift for anybody that's actually doing the job." SC6SP1*
>
> *"You've got a web interface, where you have to click next, and you decide where you want to go. Selectively. Where in the older days it was more structural." SC6SP1*

e) Dealing with Challenges Frame – Organizational Managers

The *Dealing with Challenges* performing frame describes how organizational managers use cultural resources to make sense of situations they encounter during IS development and how these resources provide guidance as to appropriate courses of action. For instance, organizational members are required on occasion to deal with bad news. Managers frame the behavior and action they expect from organizational members by drawing on past experience in the organization, where members were discouraged from expressing concern.

> *"In the distant past people were really discouraged from expressing concern up the hierarchy. So with lots of people with long service, there is still a number of pockets of that." SC7SP1*
>
> *"I think sometimes there is a little suppression in [the Organization]. That bad news doesn't flow uphill fast enough." SC8SP1*

Furthermore, managers at different levels have different frames concerning how the organization approaches the reporting of bad news. Executives frame their expectations of behavior of their followers on the belief that the organization focuses on solving issues, rather than blaming perpetrators.

> *"So while we will all play the issue rather than the person…" SC7SP1*
>
> *"My view is I find people don't really play the man here. I find they solve the problem." SC10SP1*

However, those lower in the organizational hierarchy frame the organization's approach to the reporting of bad news differently. These managers create their framing of how bad news should be handled by drawing on the value the organization places in a positive outlook from its members...

> *"Just because of the executives that you have, it's almost as if you know it drives a very positive view of everything." SC1SP1*

...and in a belief that the delivery of bad news will have negative consequences for the messenger. A senior manager uses an example in the context of IS development initiatives to illustrate why organizational members avoid reporting issues and challenges.

> *"I've seen where project and programme managers have been brutally honest of all the problems and challenges, yuh, they get nailed. That does not get appreciated." SC1SP1*

This frame of reference creates the belief among some managers that the IS development teams withhold important information. As some senior managers explain:

> *"I don't always think they tell us everything they know. They don't lie, I'm not saying that, but they know things, and if we don't ask in the steering committee, they won't say. They won't offer the information. And in that meeting, I sometimes sit and wonder, what should I ask them that they are not telling us." SC2SP1*
>
> *"No, I'm not sure that Kindle always puts everything out there. Sometimes SC9SP1 has been a bit criticized by some of the people that you always paint such a rosy picture of where we are, you know." SC10SP1*
>
> *"We wait too long before you actually say, guys I need to escalate." SC4SP1*

These experiences contribute to the belief that the message delivered by the IS development teams will be skewed to project a positive outlook. This belief in turn erodes trust by organizational managers in the IS development team.

> *"So, don't always just paint this rosy picture. Paint the bleaker picture as well." SC4SP1*
>
> *"So we have a very optimistic view on our estimates, because you know we can do everything and anything, and it's not going to take that long. Almost always we find that we have under estimated complexity, and we are underestimating the effort. That's the standard pattern across all out projects." SC1SP1*
>
> *"I think, in Kindle specifically, there is too much of a good news story. I think we are in more trouble than what people say publicly." SC1SP1*

The framing of how bad news should be handled extends into a framing of how organizational members should deal with uncertainty. Again, managers frame the scenario by drawing on past practice in the organization where members are encouraged to have a positive outlook. Consequently, organizational managers place an unrealistic reliance on planning to mitigate uncertainty. This has the effect of further stifling the disclosure of risk.

> *"We think because we have a plan, we can predict what is going to happen. And so if there is a project plan, we need to know exactly how much it's going to cost, what's going to happen, what the outcome is going to be. And when that doesn't happen, people are like, but how could you not know. How could you not plan for this, how could you not think of that, how could you..." SC10SP1*
>
> *"And then if there is dependency on the upgrade, which I suspect, which they aren't really saying out loud." SC10SP1*

Organizational managers appear to pay little overt attention to formal risk management practice in the project environment. For instance, risk does not appear as a standard item on the steering committee agenda, and risk discussions occur in more informal ways.

> *"I noticed at the meeting today that the project team doesn't appear to present risks. They may be in the pack that is distributed, I will ask for that, but they weren't an agenda item for discussion today, and I don't remember any focused discussion on risks at the previous steerco. The risks associated with certain actions do get raised, but there doesn't appear to be proactive risk management." FN Comment - Steering Committee Meetings 04-04-2017*
>
> *"What I have in terms of risk reporting is quite sketchy in relation to the size and complexity of the project (2 risks on the May migration risk report, and 6 on the Release 2 risk report)." JE Kindle*
>
> *"There is no discussion in the Steerco on risk. It may come up in an unfocused way when discussing individual items, but there is no formal focus on risks and risk management." MN 4-4-2017*

This framing of how to deal with uncertainty in the IS development context is in contrast to the approach the organization adopts in dealing with uncertainty in day-to-day business operations. Here, organizational managers frame their actions on the organizational culture of '*excellence'*, and the concern for maintaining their position as leaders in the industry. With this frame of reference, managers follow a mature and robust approach to managing uncertainty in the business environment.

> *"We've got a long list of criteria that define our risk appetite and where we are falling short, across every business unit. We look every quarter at how they have changed, what we need to do, what action plans we've got in place to tackle those particular risks." SC7SP1*

f) Dealing with Challenges Frame – IS Development Team

The *Dealing with Challenges* performing frame illustrates the cultural resources used by IS development team members to make sense of difficult situations they encounter during IS development,

and how these resources provide guidance as to appropriate courses of action. In dealing with challenging situations, team members refer to the organizational expectation of a positive outlook and align their actions with that. Hence, team members display reluctance to deliver bad news or raise uncertainty.

> *"I always feel sometimes that the testers, whoever does their bit are not upfront - do you understand. So when they test, to say but you can't do this because we don't have that." TL5SP1*
>
> *"The triage meetings show the hesitation in putting something on the risk log. Conversation gets diverted by a discussion on whether something should be on the risk log or not." MN 2017.02.10_10.59_01*

This framing by IS development team members affects the approach they adopt to deal with risk. For instance, IS development leaders focus their attention on planning activities to mitigate risk and deliberately construct conservative project deliverables. This approach allows the team to mitigate risk without explicitly publishing their concerns. Furthermore, structures have been introduced that involves users in decision making that affects the development effort. This allows users rather than the development team to table concerns that need to be addressed.

> *"I'm starting with very low expectations, I'm setting the expectations very low and I'm not committing anything past July at the moment. That is our planning horizon." SC9SP1*
>
> *"There's [the product line] Transformation Manco, that's kind of a governance forum. What happens is if there is a concern, it pops out there. So we do a lot of work before that to understand the concerns and to try and work with it." SC9SP1*

5.5.4.2.4 Assessing Achievements Frame – Organizational Managers

The *Assessing Achievements* performing frame describes how organizational managers draw on their cultural tool kit to determine the benchmarks they should apply to assess performance. The belief that organizational members represent the best in the business is reflected in the results of performance assessments, to the frustration of some organizational managers.

> *"... only a very small percentage of [the Organization] staff don't get paid bonus. So, almost without exception, everyone does what they are required to do or better, and that surely cannot be the case." SC4SP1*

In the context of IS development initiatives, organizational managers frame performance by considering both efficiency and effectiveness criteria. Additionally, the framing of performance appears to be tempered by consideration of the difficulties of the undertaking, informed by the experience of similar past initiatives.

> *"We had this as the number 2 risk group wide, that we would undo our whole business performance, business environment, if we got this wrong. It was almost considered to be a certainty that there would be massive fallout from that rollout, because of all the parties involved. And the great success was that we didn't have that." SC7SP1*
>
> *"We've acknowledged this kind of transformation you do once in 25 years, so you know this one we not, we not, sort of, we are not taking our time, but we are certainly not rushing it at risk to the business." SC7SP1*
>
> *"There is definitely a bit of more openness to consider the context in which the project delivers." SC10SP1*

Furthermore, the suitability of assessment criteria may be reconsidered as shortcomings are revealed in practice. The framing of assessments thus change over time, as the true nature of the outcomes of development efforts becomes apparent. These realities become factored into a new framing.

> *"You can't find a metric for absolutely everything and at times if there's a very long term objective that you are trying to put a metric next to, it might just be a little bit, sort of contrived." SC7SP1*
>
> *"You would, last year you would celebrate the success of Kindle, and next year March you say well we've got to do a whole, redo a whole piece of work which was not done properly." SC4SP1*

5.5.4.2.5 Assessing Achievements Frame – IS Development Team

The *Assessing Achievements* performing frame describes how IS development members draw on their cultural tool kit to identify the important and salient criteria against which their performance will be assessed. IS development team members believe the norms established in respect of professional commitments are of primary importance. From this perspective peer pressure becomes an important factor in shaping the behavior of individuals.

> *"Now, it can be tracked. And, um, we can see when you are not doing your work and you not performing…" TL1SP1*
>
> *"Also in the team, they just want to excel the whole time. And I think it's not just to please her. It's kind of, I think there is a level of professional pride in what they do." SC9SP1*

The technicalities and complexity of the work, together with an organizational expectation of quality outputs and integrity on the part of its employees also factor into an understanding of how performance is assessed. Hence, achievements are explained in the context of task complexity, and slower progress than anticipated is tempered by reference to high quality output and a strong work ethic.

> *"I know we are not where we thought we would be in terms of the migration, but [the product line] has a lot of complexities." SC6SP1*
>
> *"We aren't making progress as fast as the programme would have liked to, but at least that, that what we are putting in is 100%." TL4SP1*
>
> *"People who are doing the work are working hard, and they understand the complexities and challenges, and on that basis the project is performing well." TL6SP1*

5.5.4.2.6 Summary of the Performing Frames

This section summarizes the findings of the performing frames for each social group involved in Kindle activities. Idiographic data related to each group and each performing frame is illustrated in Table 15.

Performing Frames	Organizational Managers	IS Development Team
Defining Success		
- *Success criteria* - *Pragmatic refinement of criteria* - *Methodology principles*	Measurable, short term criteria are important. *"I think it is about growth, and cost reduction, and that's what will be measured"* *"Unless you talk numbers, actually you are wasting my time."* Refine criteria in view of contextual factors. *"...we've been very successful in terms of*	Long term criteria are more important. *"They don't want to go back to the old ways of doing things."* Principles inherent in development methodologies must be applied. *"We kind of really embraced almost, the Agile ethos. Which is very collaborative."*

Performing Frames	Organizational Managers	IS Development Team
	the business adoption of the system."	
Working at Being Best Dealing with Challenges		
- *Organizational values and norms* - *Fear*	Withhold the reporting of bad news. *"We wait too long before you actually say, guys I need to escalate."* *"I don't always think they tell us everything they know."* Deal with the issue rather than the individual. *"So while we will all play the issue rather than the person"* Emphasis on a positive outlook. *"...a very positive view of everything"* *"Don't always just paint this rosy picture"* *"I think we are in more trouble than what people say publicly."* A legacy discouraging expressing concern. *"In the distant past people were really discouraged from expressing concern"* *"...bad news doesn't flow uphill fast enough."* Fear of consequences. *"I've seen where project and programme managers have been brutally honest of all the problems and challenges, yuh, they get nailed"*	
- *Support for risk management*	Risk management of the IS initiative is partly supported. *"We think because we have a plan, we can predict what is going to happen."* *"There is no discussion in the Steerco on risk."*	Risk management should be surreptitious. *"I'm setting the expectations very low and I'm not committing anything past July"* *"...a governance forum. What happens is if there is a concern, it pops out there."* Hesitancy to disclose risk. *"...the testers, whoever does their bit are not upfront."* *"...hesitation in putting something on the risk log."*
Working at Being Best Enacting Agency		
- *Inherent values & capability of technology* - *Inherent values in development methodologies*	Those in authority can manipulate technology. *"I'll adapt the system to my way of working…"* *"This is what we have, we want exactly that."* The capability of the technology changes existing practice. *"My staff needs to become... ...less technical in a sense from a [specialist] perspective."* Values inherent in new development methodologies change practice. *"…there are certain expectations of leaders*	Specialists on old technology change new technology to match their expertise. *"...the way the system was designed, configured... ...now we are trying, we are rectifying that."* Values inherent in software development methodologies determine the values of IS development teams. *"We kind of really embraced almost, the Agile ethos. Which is very collaborative."* New technology challenges the status of existing specialists. *"...you don't own the UI..."* *"...you're on the mainframe, you know*

Performing Frames	Organizational Managers	IS Development Team
	that are built into the methodology."	*nothing."*
Working at Being Best Leading		
- *Organizational values and norms*	A commitment to respect people. *"That we are there for people, we exist for people."* Bottom line is most important. *"It's all about the bottom line. It's not about the people."* *"...there's also not a lot of tolerance for people not pulling their weight."*	Slogans and signage indicate important values. *"So we had all these mantras that we drove…"* Size and complexity override organizational norms. *"...you can't always just fit into the broader corporate structure"*
- *Relationships*	Relationships matter. *"You can't deliver without relationships."* *"...relationship takes precedence over everything else."*	Relationships matter. *"...still spend a lot of my time to make sure all the relationships keep on going."*
- *Collaboration*	Mixed views on inclusive participation. *"I never get the sense that you cannot say something."* *"…to be listened to and to be heard. In some areas I don't observe that."*	A collaborative approach to software development is important. *""And the thing that to me is pleasing is that they put that, we put that plan down together."*
- *Empowerment*	Autonomy is desirable. *"Most people I hope experience themselves as empowered."* *"If you want something big and complex to be done… don't let them be interfered with…"*	Autonomy improves productivity. *"No one tells us how to do it."* *"…that gives you a big productivity boost."*
Assessing Achievements		
- *Past experience* - *Organizational values and norms* - *Time* - *Peer pressure*	Drawing on past experience. *"There is definitely a bit of more openness to consider the context in which the project delivers"*	Peer pressure and professional pride count. *"we can see when you are not doing your work and you not performing"* *"they just want to excel the whole time"*
	Excellent performance is anticipated. *"...everyone does what they are required to do or better, and that surely cannot be the case."* Assessments are time bound. *"...last year you would celebrate... ...and next year March you say well we've got to ... ...redo a whole piece of work which was not done properly".*	Organizational values are more important than progress. *"We aren't making progress as fast as the programme would have liked to, but at least that, that what we are putting in is 100%."* *"People who are doing the work are working hard... ...and on that basis the project is performing well."*

Table 15. Summarizing the performing frames in Kindle

5.6 Within-case Analysis – Blend

This section describes the within-case analysis of the Blend data. The discussion will show that most of the themes that emerged from the Kindle analysis were also applicable and relevant for Blend. Thus, rather than repeat these theme descriptions during discussion of this second case, a reference is made instead to the sections in the within-case analysis of Kindle data where detailed descriptions are provided.

5.6.1 Themes in the Blend Data

The most relevant themes and sub-themes that emerged from an analysis of the Blend data, and the initial codes that were identified, are illustrated in Figure 33. Two themes and eleven sub-themes were identified. The theme ***Cultural Contradictions*** aggregates five sub-themes; *Technology Contradictions*, *Role Contradictions*, *Vision Contradictions*, *Value Contradictions* and *Process Contradictions.* The theme ***Processes of Performing*** aggregates three sub-themes; *Defining Success*, *Working at Being Best* and *Assessing Achievements*. The *Working at Being Best* sub-theme further aggregates three additional sub-themes; *Leading*, *Dealing with Challenges* and *Enacting Agency*. A number of codes were also identified and subsequently discarded in respect of further analysis. Thus, while *Being a Leader* represents a cluster of meaning and aggregates the codes *Being a Role Model* and *Levels of Leadership*, as does *Making Sense* which aggregates *Using Symbolism* and *Creating a Vision*, both were considered less relevant to the research topic and research questions and excluded from further analysis. Similarly *Commitment from Stakeholders* was excluded from further analysis. The themes and sub-themes are therefore the focal points of the discussion and theorizing in the sections that follow. The aggregation of candidate themes associated with the themes and sub-themes is described in attachment 9.8.

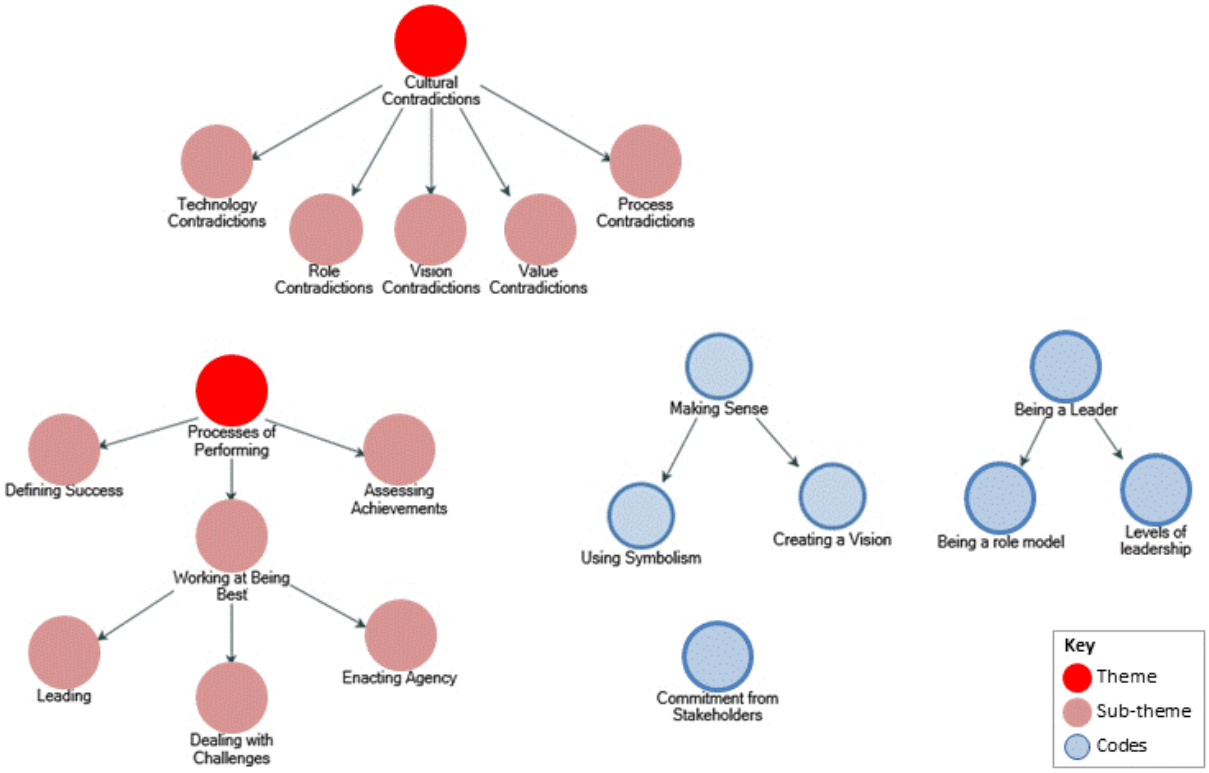


Figure 33. Themes, sub-themes and codes in the Blend data

5.6.2 Relationships between Themes in the Blend Data

The interdependence of themes in the Blend data is illustrated in the theme / sub-theme hierarchy (see Figure 33) and also by the relationships uncovered in the data. Relationships in the data were identified during the analysis and coded using NVivo '*Relationships*' as described in detail in section 5.3. A

sample of the relationships and associated data is provided in Table 16 as an example. The full set of relationships and associated data is included as attachment 9.11.

Relationship	Name	Coded Text
Cultural Context challenges Working at Being Best	CT1SP2	We are going to do what needs to be done, and first we are going to do what needs to be done according to the rule book, and then if some impossible thing comes up, we may have a quiet meeting without the rule book, and make it happen.
Cultural Context creates Cultural Contradictions	CT6SP2	I think, mainly because not, it's always time, time, time, time critical. Don't take enough time to properly plan. Half of the time we are going over our deadlines, because I feel that they didn't properly follow right processes to estimate time, resources, cost.
Defining success contextualizes Assessing achievements	CT9SP2	I think that where we are at and how we've been able to engage with the business, how we've been able to position our requests for funding, the project is very much in a positive light. Out of a rating of 10 or 5 for that matter, I'll rate it currently at with all the considerations I'm talking about stakeholder management, communication, financial management, all of those, so we are very much in the 7 to 8 bracket.
Working at Being Best challenges Cultural Context	CT7SP2	So, this is actually going to change a lot of how people work. So I think the whole design principle is a win, and maybe your cultural , because to be inclusive and try and expose people, involve them in the workshop, involve them in the design process, etc. etc., etc.

Table 16. Extracts of relationship coding and associated data for Blend

A mapping of the relationships between themes and sub-themes coded in the data is illustrated diagrammatically in Figure 34 using NVivo Pro '*Project Maps*'. The diagram illustrates that the ***Cultural Context*** provides norms for how individuals and groups should accomplish *Working at Being Best* and provides norms for how *Assessing Achievements* and *Defining Success* should be performed. *Defining Success* in turn contextualizes *Assessing Achievements*. While the ***Cultural Context*** provides the norms for *Working at Being Best*, it also creates ***Cultural Contradictions*** that challenge *Working at Being Best*. *Working at Being Best* in turn changes the ***Cultural Context***. The diagram also shows the bi-directional nature of some of the relationships; the ***Cultural Context*** challenges *Working at Being Best*, and *Working at Being Best* in turn challenges the ***Cultural Context***.

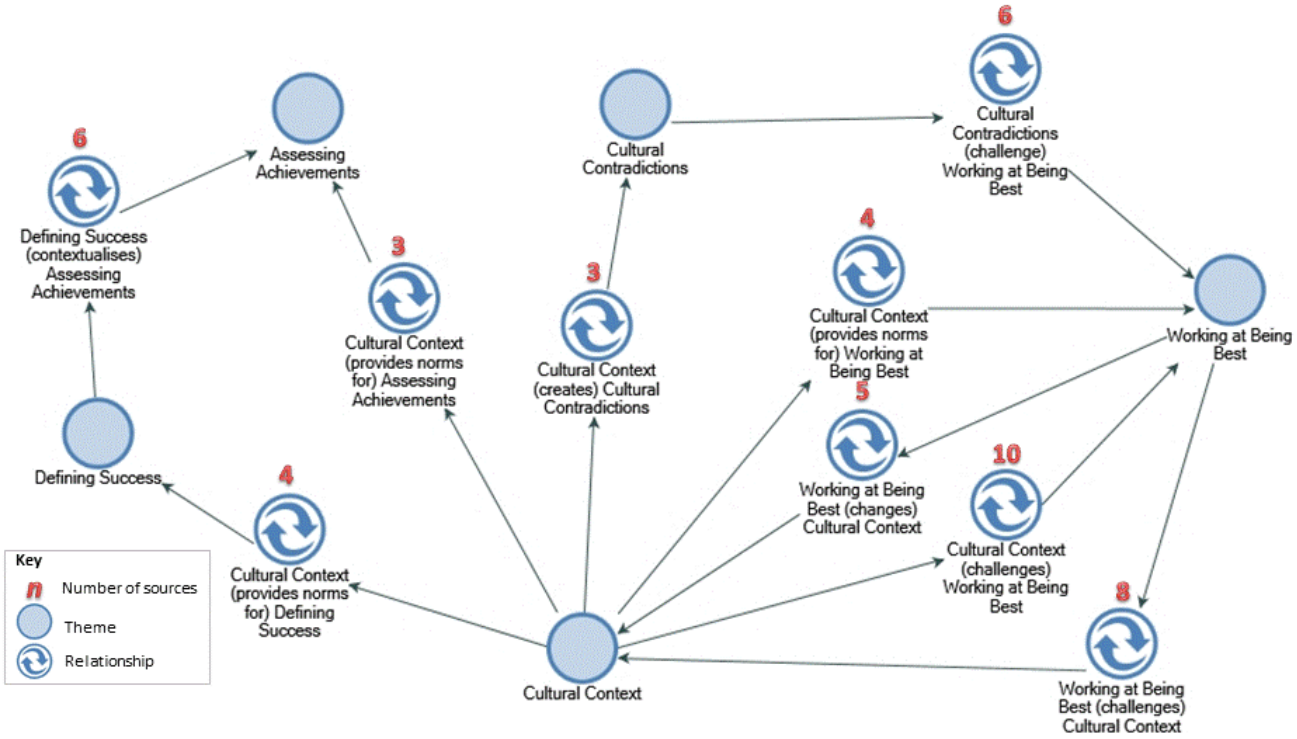


Figure 34. Relationships between the themes in Blend

5.6.3 Interpretive Theorizing

The similarity in themes and sub-themes between the Kindle and Blend cases (see Figure 27 and Figure 33) indicates that the conceptual model produced from the Kindle data (see Figure 29) is equally applicable in the Blend context. The components of the model are described in section 5.5.3 and these descriptions are not repeated here. Each component of the conceptual model forms the basis for the further interpretive theorizing of the Blend data that follows in this section.

Two concepts in the conceptual model contextualize ***Processes of Performing;*** ***Cultural Context*** and ***Cultural Contradictions.*** ***Cultural Context*** has been discussed previously in section 5.4.1. This section thus first presents an analysis of ***Cultural Contradictions*** in the Blend data, and then uses frame analysis as a theoretical lens for further analysis of the ***Processes of Performing***. The acceptability of the themes and sub-themes of ***Processes of Performing*** as frame domains and the identification and composition of the social groups in this analysis is discussed in section 5.5.4, and is consequently not repeated here.

5.6.3.1 Cultural Contradictions

The description of ***Cultural Contradictions*** is discussed previously in the context of the Kindle case. The same description is equally applicable in the context of the Blend case and is not repeated here; rather it can be referred to in section 5.5.4.1. In Blend, ***Cultural Contradictions*** aggregates the sub-themes *Technology Contradictions*, *Role Contradictions*, *Vision Contradictions, Value Contradictions* and *Process Contradictions*, as illustrated in Figure 35. The sub-themes are further described and related to relevant idiographic data in the sections that follow.

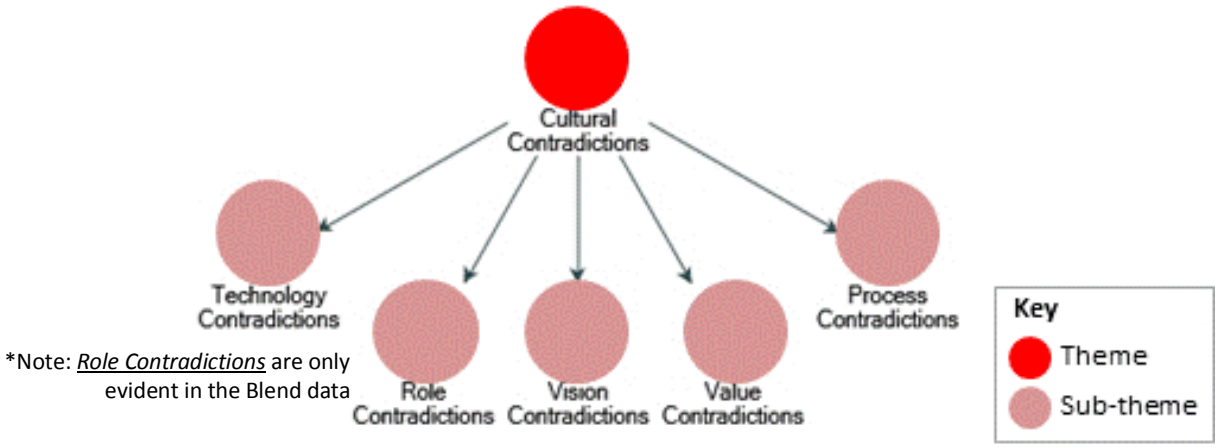


Figure 35. The theme 'Cultural Contradictions' with sub-themes for Blend

5.6.3.1.1 Vision Contradictions – Organizational Managers

Vision Contradictions illustrate the misalignment of the goals of different stakeholders. The organization experiences misalignment between the organizational strategy and operational activities causing conflicting strategies in different organizational units.

> *"If you go into a functional breakdown, say with only in [the Organization], then you'll find that there are conflicting strategies." CT4SP2*

5.6.3.1.2 Vision Contradictions – IS Development Team

In the IS development team the alignment of the goals of different stakeholders is threatened by the complexities inherent in IS development. This complexity creates difficulties in clearly articulating a vision, causing different interpretations of what the final IS solution looks like, giving rise to *Vision Contradictions*.

> *"So there wasn't a good conceptual understanding. So remember, we are buying a finished product. And there wasn't, I think even for me, I know business struggled with it, I even struggled with it, to fully get the context of everything." CT6SP2*

5.6.3.1.3 Value Contradictions – IS Development Team

Value Contradictions arise from different value systems held by individuals and groups. In the IS development context, value misalignment creates different perspectives among stakeholders on where to focus IS development activities. Meeting delivery commitments is a high priority for the development team but not necessarily so for business stakeholders.

> *"So they [end users] did say that the timelines are too stressed and we are just trying to tick boxes. We are not realistic." CT6SP2*

5.6.3.1.4 Process Contradictions – IS Development Team

Process Contradictions describes the differences in work practices that arise from different assumptions, beliefs or values held by individuals or groups. *Process Contradictions* can arise through a need to adjust organizational procedures to meet specific IS development requirements. For example, time pressures on the Blend initiative caused deviance from organizational standards.

"...if you try to follow the exact process that they designed, it would be impossible to do anything." CT1SP2

"...it's always time, time, time, time critical, don't take enough time to properly plan, half of the time we are going over our deadlines..." CT6SP2

5.6.3.1.5 Technology Contradictions – Organizational Managers

Technology Contradictions describes the different beliefs and assumptions about technology that has a bearing on how technology is accepted, implemented and used. *Technology Contradictions* can result from a gap in the degree of fit between the nature and functionality of the IS solution and the experience or expectations of organizational stakeholders. For example, the architecture of existing systems and the knowledge and experience of existing IT professionals can create resistance to new technology.

"If it doesn't fit you can't use it. So that to me is something that's always... And it's probably because of the strong IT skill set, you know, and the very specific way that I think adds a lot of cost to projects." CT3SP2

5.6.3.1.6 Role Contradictions – Organizational Managers

Role Contradictions describes the different beliefs and assumptions about roles that can impact the harmony of social interaction. For instance, uncertainty regarding the contribution from different individuals in the IS development team raised concern amongst organizational managers of possible wasteful expenditure.

"Initially I think he was a bit uncertain about the roles. So, CT8SP2 is there, CT9SP2 is there, we've got CT6SP2 there as well, so who is doing what. So it's sort of heavy from a resource perspective, and these resources cost us money. So, what does CT8SP2 do? And what does CT9SP2 do? You know, so there's no duplication of roles and stuff like that." CT5SP2

Similarly, a lack of understanding regarding specialist IS development roles caused questions to be raised regarding the value of some team members.

"There's a business analyst who's a very IT focused business analyst, having to come to grips with what is the business imperative. And yes it gives you the link sometimes I think, it gives you the link to understand. If you have a good business analyst it helps you, but there's a learning curve that adds cost to projects." CT3SP2

5.6.3.1.7 Role Contradictions – IS Development Team

In the IS development team the different beliefs and assumptions about roles led to a discounting of the value of specialist skills.

"I'm not a formal tester, I've just been told to go test, train, business analyst, project assistant everything on this project, systems architect as well." CT6SP2

5.6.3.1.8 Summary of Cultural Contradictions

This section summarizes the ***Cultural Contradictions*** that exist for the two social groups in Blend. The analysis reveals *Vision Contradictions*, *Technology Contradictions* and *Role Contradictions* among the organizational managers. The IS development team show evidence of *Vision Contradictions*, *Value Contradictions*, *Process Contradictions* and *Role Contradictions*. The summarized findings with related extracts from the idiographic data are illustrated in Table 17.

Cultural Contradictions	Organizational Managers	IS Development Team
Vision Contradictions - *Achieving alignment*	Alignment is not always achieved. *"...you'll find that there are conflicting strategies."*	Alignment is not always achieved. *"I know business struggled with it, I even struggled with it, to fully get the context of everything."*
Value Contradictions - *Time versus excellence*		Meeting deadlines takes precedence. *"...the timelines are too stressed and we are just trying to tick boxes."*
Process Contradictions - *Support for governance* - *Time pressures*		Value of governance is questioned. *"...if you try to follow the exact process that they designed, it would be impossible to do anything."* Time pressures. *"...it's always time, time, time, time critical, don't take enough time to properly plan, half of the time we are going over our deadlines..."*
Technology Contradictions - *Degree of fit*	Fit with existing systems. *"...If it doesn't fit you can't use it."*	
Role Contradictions - Value of specialists	Value of specialist roles is questioned. *"...If you have a good business analyst it helps you, but there's a learning curve that adds cost."*	Value of specialist roles is questioned. *"I've just been told to go test, train, business analyst, project assistant everything on this project, systems architect as well."*

Table 17. Summarizing the 'Cultural Contradictions' in Blend

5.6.3.2 Performing Frames

The notion of performing frames conceptualized as ***Processes of Performing*** (consisting of *Defining Success*, *Working at Being Best* and *Assessing Achievements* - see Figure 31) is discussed in the context of the Kindle case. The same discussion is equally applicable in the context of the Blend case and is not repeated here; rather it can be referred to in section 5.5.4.1. In the sections that follow these performing frames are described and related to relevant idiographic data for each of the two social groups in Blend.

5.6.3.2.1 Defining Success Frame – Organizational Managers

The *Defining Success* performing frame explains the elements in the cultural tool kit organizational managers consider important and salient criteria for benchmarking future performance, and how these are used to frame what success means to them. In day-to-day operations, executives and senior managers recognize that the organization is primarily concerned with growth and profitability. Organizational managers thus frame organizational performance as the achievement of these performance metrics.

> *"I think we are currently a target driven organization. Maybe that's a better way of putting it. We are working towards targets." CT5SP2*

In the IS development context some managers look to the value the organization places in its people when considering performance measures. Here, longer term objectives like the growth and enablement of their staff become salient in framing success criteria.

"How do you actually use this, pull it into this and enable people, and with that get the whole sort of momentum going." CT7SP2

"For CT7SP2 the key thing is not whether his Manco guys will be happy, but whether the people on the floor will be happy." CT8SP2

5.6.3.2.2 Defining Success Frame – IS Development Team

The *Defining Success* performing frame describes how IS development team members draw on their cultural tool kit to identify important and salient criteria against which their future performance will be assessed. Meeting client requirements is the most important criteria for IS development team members. The development team takes a business perspective on the initiative that is broader than the immediate implementation and seeks to develop a solution that offers sustainable benefits in order to be considered a success.

"If I don't have happy end users, it actually means nothing." CT1SP2

"But the biggest thing for me, I want the client says it meets my expectations. And it's a value proposition to me." CT8SP2

5.6.3.2.3 Working at Being Best Frames

The *Working at Being Best* performing frames (consisting of *Leading*, *Dealing with Challenges* and *Enacting Agency* – (see Figure 36) is discussed in the context of the Kindle case. The same discussion is equally applicable in the context of the Blend case and is not repeated here; rather it can be referred to in section 5.5.4.2.3. In the sections that follow the *Leading* frame, *Dealing with Challenges* frame and *Enacting Agency* frame are described and related to relevant idiographic data for each of the two social groups in Blend.

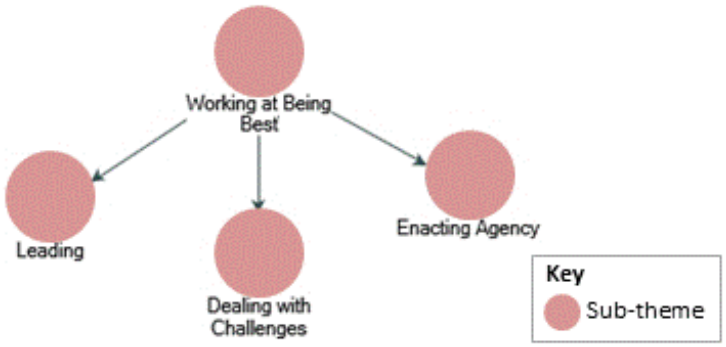


Figure 36. Working at Being Best performing frames

a) Leading Frame – Organizational Managers

The *Leading* performing frame describes what components of the ***Cultural Context*** are most relevant to organizational managers to guide their leadership actions. A long legacy of autocratic management in the organization provides an important cue for many organizational managers and acts as an influential factor in shaping subsequent leadership action.

"A 100 year history, and it's always been dominated by middle aged, men, white men, who always made the decisions. And I think that legacy still lives through this organization." CT5SP2

Coupled with this legacy is the long service record of many organizational members. These individuals have commonly been involved in operational activities before moving into management positions. Consequently, leaders in the organization frame their behavior in a manner that accommodates their continued involvement in lower level activities, resulting in a workforce that is generally not empowered.

> *"They've come through this organization, from an operational, they started out at operational level and they moved their way up to the, let's call it senior position, even at executive positions." CT5SP2*

This framing of leadership is not shared among all organizational managers. Senior managers new to the organization are more likely to frame leadership behavior in a context that supports the empowerment of organizational members.

> *"I'm quite a big believer in sort of the supportive leadership style. It's not about us making as a leadership group making the decisions. It's actually about empowering people to make decisions." CT7SP2*

> *"He always encourages the dialogue, let's people give their input, so it's not him being the authoritarian one, saying I make the decision, this is the decision. It's very much consultative." CT5SP2*

Leadership is also framed by a belief in the necessity to safeguard decision makers against potential mistakes. In these cases, the framing is guided by an organizational expectation of excellence and a low tolerance for mistakes. Collective decision making allows accountability for the decision to be spread amongst all the participants. The effect is that decision making in the organization is generally a lengthy process.

> *"I think people are very careful. So when you ask people to make decisions, (??) I need to consult with my manager first, and the manager needs to consult with the executive first." CT5SP2*

> *"...we take too long to make decisions." CT4SP2*

The framing of leadership behavior in the organization also takes cognizance of the importance placed by the organization in its people. Leaders frame their leadership actions in the context of how their actions will affect organizational members and customers. Thus consideration is given to the relative importance of people versus meeting organizational objectives.

> *"We need to make sure that we take people into account, that actually there is a balance between the actual work that people have got to do, and actually participating in the project." CT4SP2*

> *"This is not a hard execution culture. [the Organization] also has a delivery culture, but it's softer in terms of how we approach things, how we bring people into processes." CT7SP2*

Leadership actions are also framed by the importance of internal and external relationships in everyday business. Amongst organizational managers, it's clearly understood that establishing and maintaining relationships is the key to successful business interaction.

> *"What's actually important I believe in this business, and what has made it successful, is its ability to manage relationships, at many levels." CT7SP2*

b) Leading Frame – IS Development Team

The *Leading* performing frame describes which cultural resources IS development team members use to understand leadership actions in the IS development context, and to adjust their own behavior accordingly. Senior members of the development team believe leadership is framed to support

collaboration and empowerment and this frame of reference is supported by researcher observations of team meetings.

> *"That's a very open forum, and people are not afraid to speak their minds." CT1SP2*
>
> *"He's allowed for a very um, uh what's the, a forum that's conducive to discussion and flow. You know, and if there is disagreement, we'll disagree, and understand why we disagree, you know, or why do we see it differently. "CT9SP2*
>
> *"So as long as you satisfy his requirements, he doesn't tell you how to do it. He just says these are the requirements that need to be met. And then do it the right way, whatever that may be." CT1SP2*
>
> *"There is good discussion, involving all of the team. CT7SP2 makes sure he understands." MN 2017.03.23_14.56_01*

Aligned to the attention paid to collaboration in framing leadership activity is the attention paid to building and maintaining relationships.

> *"So I play more on the side of good relationships. So, I build good rapport. To me, it's a game about relationships. Me and my stakeholders, I have lots of chats with them." CT8SP2*

There is however a contrast in the framing of leadership among IS development team members. A relatively junior team member draws her cues on leadership from her own experiences in the organization. In her experience the leader dictates and doesn't encourage collaboration. The consequence is reluctance on the part of this individual to raise issues or engage in debate.

> *"Um, you don't feel confident to give your input or argue a point. You don't get that feeling that they are really listening and considering, they are open-minded. It's just they, their way, that's the way, no other way. But I don't always agree with him and then he doesn't allow me to tell that. Again, it's like my way is the way, no other way." CT6SP2*
>
> *"I think, you are too scared to raise something or to argue something. Especially if you are a person that's not, you know, you not that strong a person." CT6SP2*

c) Enacting Agency Frame – Organizational Managers

The *Enacting Agency* performing frame describes how organizational managers refer to their own power and capacity and the inherent culture in technology to guide their leadership choices and actions. This technology culture manifests as perceived inherent values and capability built into the technology solution (Leidner & Kayworth, 2006; Waring & Skoumpopoulou, 2012). For instance, organizational managers use the culture embedded in the new technology solution to provide cues and guidelines for decisions on the role the technology will play in their business operation. An acceptance of the superiority of in-built capabilities in the new technology over existing practices, and bad experiences in the past with package customization, frames the agency of the technology. Thus managers adjust organizational practice to match the dictates of the new technology solution.

> *"Always the important thing for me on any project is not to try and say this is what I had and try and make, and I think [the Organization] has learnt it in a very expensive way with [package solution]. There was a lot of getting it to look and feel and work, instead of saying, and I think [organizational employee] has been here 10, 12 years trying to undo some of those." CT3SP2*
>
> *"We will stick to vanilla as far as possible, and everybody will have to fit in to that sort of criteria." CT4SP2*

At the same time organizational managers recognize that they can use their authority to manipulate the technology in ways that suit their existing business practices.

> *"You'll probably find then CT7SP2 will say well I would like it like this. So we will have to probably have a very healthy debate at that time to say but this is not a standard and if you want it like that we'll have to either create a report, or you can download it in excel and change columns if you want it that way." CT3SP2*

This manipulation of technology is also used in more subtle ways. For instance, leaders recognize how the agency in technology can contribute to fulfilling certain leadership functions. Firstly, the technology can play a role in constituting identity by contributing to an individual's understanding of who they are and what their capabilities are. By acting as an enabler of potential, the new technology solution offers opportunity which individuals can leverage.

> *"So to me that's the big change and it's going to be here's an opportunity, what are you going to do with it? I think that's going to bring a complete uneasiness." CT3SP2*

> *"Maybe with a whole lot of reports being generated quickly etcetera, staff may be released to actually do a bit more thinking, versus the boring and mundane work." CT4SP2*

Secondly, leaders use cues from an *Enacting Agency* frame to recognize the potential in the new IS solution to contribute to employee wellbeing and development. The new solution can help retain and motivate valuable staff by allowing a focus on the core job requirement that requires application of their specialist skills, rather than spending time on mundane, rote tasks.

> *"…it becomes demotivating and you go into that whole spiral. And that was my big concern, and that was why the system for me was so important." CT7SP2*

> *"And I think this system, … the catalyst to really get the expertise of the people, not only the expertise, but their capabilities to bring that out, to make that sort of, give them the ability to operationalize." CT7SP2*

Finally, leaders recognized that the common 'language' and jargon inherent in the technology solution itself could act as a unifying device. Technology can create a sense of belonging, by representing aspects of individuals' lives that are held in common (Goggin, 2008). By introducing a solution that multiple units in the larger group of companies could use, individuals and groups could be united through that common experience.

> *"We are now looking for a very generic product, so you know I can actually roll it out to [Company2], [Unit1], I can roll it out to [Company3], it must be, you know, of such a nature that everyone can just plug in and become part of the family." CT3SP2*

> *"So I think generically we get all the concepts right, you know to make sure that they don't talk about [X] and [Y], it's all [X]. And that's the one thing I hope that will break, 'cos there are these two camps in [our unit], CT4SP2 and his … team, and CT5SP2 and his team." CT3SP2*

d) Dealing with Challenges Frame – Organizational Managers

The *Dealing with Challenges* performing frame describes how organizational managers use cultural resources to make sense of situations they encounter during IS development and how these resources provide guidance as to appropriate courses of action. Organizational members are required on occasion to deal with uncertain situations. Managers frame their expectations by drawing on past practice in the

organization where members are encouraged to have a positive outlook. Thus, in the context of IS development while risk management appears as a standard agenda item for team meetings (see Figure 37) there is no demonstrated attention to other important aspects of risk management, like risk response planning.

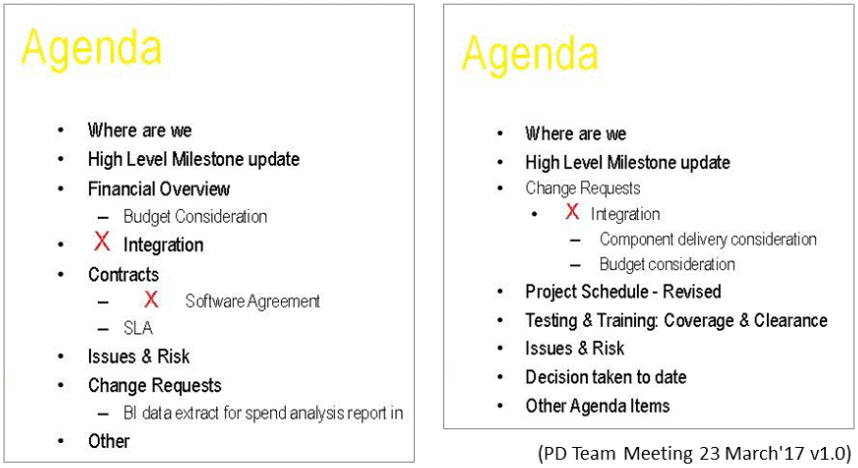


Figure 37. Examples of the agenda from Blend team meetings

e) Dealing with Challenges Frame – IS Development Team

The *Dealing with Challenges* performing frame illustrates the cultural resources used by IS development team members to make sense of difficult situations they encounter during IS development, and how these resources provide guidance as to appropriate courses of action. In dealing with challenging situations, team members refer to the organizational expectation of a positive outlook and align their actions with that.

> *"Ja, I was like hammered again. I should sell comfort, not fear. So I said, CT7SP2 asks me questions, so I have to give him the truth." CT6SP2*

Hence, team members display reluctance to deliver bad news or raise uncertainty, despite the consequences associated with risks that materialize through lack of attention and the low tolerance for risk in the organization (see Figure 38).

> *"Are you really listening to what I'm telling you? I'm raising the risk, the project risk, and you are not doing anything. You are not, you know they are sort of not proactive, they are mainly reactive, reactive, and then they throw the hammer, like big time. Once it happens, then everybody has to just up in arms and just fix it." CT6SP2*

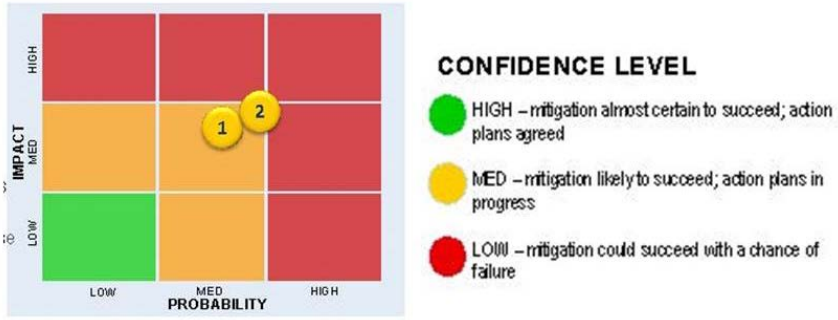


Figure 38. Blend risk severity matrix (available in project document 'Team Meeting 23 March'17 v1.0')

This framing by IS development team members affects the approach they adopt to deal with risk. For instance, the organizational focus on fostering relationships is seen as a tool to facilitate the circumvention of risk management processes if necessary, allowing objectives to be achieved despite difficult or uncertain circumstances.

> *"So what you will see is I will constantly try and make sure everybody is on the same hymn page, and work on my relationship with the guys to move things, rather than, I'm not a good process guy." CT8SP2*

Furthermore, should problems arise good relationships mitigate potential negative effects on individual team members or the project as a whole.

> *"And then what you will see from the team, the team is also protective of him. Showing up any pitfalls in terms of the investment committees, or risks that is going to bite him in the @#*£" CT8SP2*
>
> *"We look after one another. And we won't blame one another." CT8SP2*

In some cases, it's necessary to adopt surreptitious measures to deal with risk. For instance, development team members devise creative means to secure contingency funding for development activities, and team leaders focus their attention on planning as a means to mitigate risk.

> *"So you'll see I'm fairly comfortable the guys know we are hiding money away to deal with unknown risks and stuff, and they are fairly confident that we've put down a safety net there for him." CT8SP2*
>
> *"Ja, so I probably had more meetings about planning and meetings here than I've had before. So there is definitely a big focus on planning."CT1SP2*

5.6.3.2.4 Assessing Achievements Frame – Organizational Managers

The *Assessing Achievements* performing frame describes how organizational managers draw on their cultural tool kit to determine the benchmarks they should apply to assess performance. Organizational managers may frame the performance of individuals in terms not necessarily related to defined success criteria. For instance, a senior manager refers to the tendency of some colleagues to assess individuals on the basis of their office attendance.

> *"I want to see someone sitting in that chair for 8 hours. Then in my mind I know that person is doing their job." CT5SP2*

Generally, managers refer to dominant cultural values when framing assessments of performance. These include the importance of relationships to the organization and the concern for excellence.

> *"It's a very relationship orientated culture. So that impacts how [the Organization] works, it impacts how it thinks, it impacts how it hires it's people, it impacts how it approaches things." CT7SP2*

> *"A lot of those things are still at managers' discretion, the relationship that managers have with certain individuals. Some people are viewed higher than what other people are, purely because they have a better relationship than what they have with managers." CT5SP2*

Prevailing norms in organizational sub-units also frame performance assessments, creating idiosyncrasies in the performance assessments. For instance, a manager illustrates the difference in performance assessments between his area of business and another, and points to norms in the different business areas as the reason.

> *"One of our ethos in [business area] and probably interesting thing is that we very objective in terms of our measurement, and we also very understating of our potential. You know, we not people like marketing or whatever that put up big sports, we just don't do it, we don't brag enough. If you measure or benchmark it against the organization and I can talk from experience, it probably tracks 5 to 10% below the average every year from a general score." CT4SP2*

In the context of IS development initiatives, the framing of performance considers both efficiency and effectiveness criteria, but is also framed in the context of the objectives of the organizational sub-unit funding the project.

> *"There's a project plan, we agree what we are going to do, when we stick to that then I am saying we are performing. But, having said that, that's the mechanics of it. So, there's the other nuances again. How do we take our people along, how do we empower them, how do we actually build a platform for what we want to do going forward. I think that for me is another part of performance." CT7SP2*

5.6.3.2.5 Assessing Achievements Frame – IS Development Team

The *Assessing Achievements* performing frame describes how IS development members draw on their cultural tool kit to identify the important and salient criteria against which their performance will be assessed. Team members believe their performance will be assessed against short and long term criteria.

> *"It's to get the most successful outlook for the client. And come within the budget and timescales." CT8SP2*

Others frame assessments on the basis of past experiences in executing IS development duties. These past experiences become the benchmarks for assessing performance.

> *"I think that where we are at and how we've been able to engage with the business, how we've been able to position our requests for funding, the project is very much in a positive light." CT9SP2*
>
> *"A person with an open mind would look at the facts. Guys we had let's say 40 change requests, we have already fixed 20, we were told not to carry on. OK, we done something. There were 45 bugs, we've fixed everything. It's not like we are not doing anything." CT6SP2*
>
> *"It's actually a pretty good project, from a contractors' perspective. Because there's been enough warning of what's coming and that there is red tape, and I have had projects where I haven't had that." CT1SP2*

5.6.3.2.6 Summary of the Performing Frames

This section summarizes the findings of the performing frames for each social group involved in Blend activities. Idiographic data related to each group and each performing frame is illustrated in Table 18.

Performing Frames	Organizational Managers	IS Development Team
Defining Success		
- *Success criteria*	Measurable, short term criteria are important. *"We are working towards targets."* Sub-unit criteria are considered. *"How do you actually use this, pull it into this and enable people."*	Long term criteria are considered more important. *"If I don't have happy end users, it actually means nothing."* *"...it's a value proposition to me."*
Working at Being Best Dealing with Challenges		
- *Organizational values and norms* - *Using relationships*		The reporting of bad news is delayed. *"I'm raising stuff to you, I'm telling you this, what are you doing about it?"* The delivery of bad news is not well received. *"Ja, I was like hammered again. I should sell comfort, not fear."*
- *Support for risk management*	Risk management process partly supported. *A standing agenda item in core team meetings.* *Lack of attention to planning risk responses.*	Risk management is surreptitious. *"...the guys know we are hiding money away to deal with unknown risks and stuff."* Hesitancy to disclose risk. *"I'm raising the risk, the project risk, and you are not doing anything."* Good relationships mitigate risk fallout. *"We look after one another. And we won't blame one another."*
Working at Being Best Enacting Agency		
- *Inherent values & capability of technology*	Those in authority can manipulate technology. *"You'll probably find then CT7SP2 will say well I would like it like this."* The capability of the technology changes existing practice. *"We will stick to vanilla as far as possible, and everybody will have to fit in to that sort of criteria."* The capability of the technology enables potential and motivates. *"...it's going to be here's an opportunity, what are you going to do with it?"* *"…it becomes demotivating... And that was my big concern, and that was why the system for me was so important."* Inherent values unite individuals and groups. *"...it must be, you know, of such a nature that everyone can just plug in and become part of the family."*	
Working at Being Best Leading		
- *Collaboration*	Mixed framing for inclusive participation. *"We try to give everybody a chance, if someone doesn't want to contribute, but I*	Mixed framing on collaboration. *"Um, you don't feel confident to give your input or argue a point."*

Performing Frames	Organizational Managers	IS Development Team
	think overall there's good contribution." *"...people are very careful. So when you ask people to make decisions, (??) I need to consult with my manager first..."*	*"That's a very open forum, and people are not afraid to speak their minds."*
- *Organizational values and norms*	Espoused commitment to concern for people. *"...that actually there is a balance between the actual work that people have got to do, and actually participating in the project."*	
- *Relationships*	Relationships are important. *"What's actually important I believe in this business, and what has made it successful, is its ability to manage relationships."*	Relationships are important. *"To me, it's a game about relationships. Me and my stakeholders, I have lots of chats with them."*
- *Empowerment*	Generally no empowerment with some exceptions. *"... dominated by middle aged, men, white men, who always made the decisions. And I think that legacy still lives..."* *"It's actually about empowering people to make decisions."*	Autonomy happens and it improves productivity. *"So as long as you satisfy his requirements, he doesn't tell you how to do it."*
Assessing Achievements		
- *Organizational values and norms* - *Short & long term measures*	Assessment not necessarily related to defined success criteria. *"I want to see someone sitting in that chair for 8 hours."* Adhere to norms in the sub-unit. *"...we not people like marketing or whatever that put up big sports, we just don't do it, we don't brag enough."* Consideration of both short and long term measures. *"There's a project plan, when we stick to that then I am saying we are performing"* *"...how do we actually build a platform for what we want to do going forward."*	Assessment not necessarily related to defined success criteria. *"...how we've been able to position our requests for funding."* *"It's not like we are not doing anything."* Consideration of both short and long term measures. *"...come within the budget and timescales."* *"...get the most successful outlook for the client."*

Table 18. Summarizing the performing frames in Blend

5.7 Cross-case Analysis

This section provides an analysis of how organizational managers and IS development teams from Kindle and Blend construct their performing frames, by considering the cultural tool kit used by each social group in the framing process. The section goes further to offer explanations on why particular components of the ***Cultural Context*** are chosen before others. Each performing frame is analyzed in turn for the two cases; I compare the performing frames of organizational managers from each initiative, and I compare the performing frames of the IS development teams.

5.7.1 Defining Success Frame

This section compares differences and similarities between the Kindle and Blend cases in the way individuals frame definitions of success. The comparison is done between each social group of the two cases. For example, I compare how Kindle managers frame their definitions of success versus Blend

managers. A summary of the *Defining Success* performing frame for both cases is available in attachment 9.12.

5.7.1.1 Comparative Analysis of the Defining Success Frame for Organizational Managers

Organizational managers on both Kindle and Blend draw on the dominant organizational values of growth and profitability when framing what success looks like. Managers involved in Blend also use longer term measurement criteria. In Kindle organizational managers may also consider contextual circumstances when framing definitions of success, and revisit and refine criteria over time. The long duration of Kindle means the feasibility or not of a 'successful' delivery is apparent, perhaps creating a need for a more pragmatic view of 'success'. Furthermore, *Vision Contradictions* point to a misalignment of strategy and vision among both Kindle and Blend organizational managers, contributing to the potential of frame misalignment within each social group.

5.7.1.2 Comparative Analysis of the Defining Success Frame for the IS Development Team

IS development team members frame success in a similar way in both cases. Standard measures used to assess IS development are considered as relevant success criteria to the members of these social groups. Both groups also acknowledge the importance of criteria related to business sustainability and long term success. However, difficulty in articulating a long term business vision, illustrated by *Vision Contradictions*, created framing differences among Blend team members. For Kindle, organizational values and norms are not salient factors for framing definitions of success. For instance, a powerful organizational value like '*excellence*' is interpreted by the Kindle development team as the implementation of a working entity rather than a perfect solution, giving rise to *Value Contradictions* between Kindle stakeholders. This group refers instead to principles inherent in the agile development methodology, like collaboration, to frame their definition of success. The use of the agile software development methodology is new in the organization and sets this team apart from the rest. Factors that keep the team aligned to the agile principles may therefore be most salient in framing success at this time. Additionally, the *Vision Contradictions* that emerge in Kindle from the perceived unrealistic nature of cost and scope criteria illustrate a difference in the framing of success between managers and the development team.

5.7.2 Leading Frame

This section compares differences and similarities between the Kindle and Blend cases in the way individuals frame leadership. The comparison is done between each social group of the two cases. For example, I compare how Kindle managers frame leadership versus Blend managers. A summary of the *Leading* performing frame for both cases is available in attachment 9.12.

5.7.2.1 Comparative Analysis of the Leading frame for Organizational Managers

The framing of leadership by organizational managers in Kindle and Blend has many similarities. In both cases, organizational managers draw on organizational values, particularly a concern for people, when framing their leadership approach. The development and maintenance of relationships is also highly prioritized in both cases. Both cases also demonstrate some misalignment of framing among organizational

leaders. In Kindle, managers used the size of the undertaking rather than organizational norms to frame their approach to decision making, raising *Process Contradictions* with other organizational managers. In both Kindle and Blend, some managers support collaboration and inclusive participation of organizational members, and others do not. In contrast, organizational managers in Blend are more inclined than Kindle managers to support an empowerment of their followers, and managers in Kindle will use other leaders as role models in framing their leadership behavior while Blend managers will not.

5.7.2.2 Comparative Analysis of the Leading frame for the IS Development Team

The IS development teams of Kindle and Blend share some similarities in the way they frame leadership. The value of relationships in getting work done is recognised in both cases, as is the importance of autonomy for the team. Thus development teams expect to have some control over their activities, and they expect that accepted organizational practices may be circumvented in some situations. In Blend, there are differences in expectations regarding the extent of collaboration in leadership activities; some expect the leadership to be highly collaborative, others don't.

In Kindle, the IS development team frame leadership activities in the context of the size and complexity of the undertaking. They refer to slogans and signage that inculcate values specifically formulated to support Kindle development efforts. These become the guidelines for the framing of leadership activities by the Kindle development team, rather than prevailing organizational norms.

5.7.3 Dealing with Challenges Frame

This section compares differences and similarities between the Kindle and Blend cases in the way individuals frame dealing with challenges. The comparison is done between each social group of the two cases. For example, I compare how Kindle managers frame how they deal with challenges versus Blend managers. A summary of the *Dealing with Challenges* performing frame for both cases is available in attachment 9.12.

5.7.3.1 Comparative Analysis of the Dealing with Challenges Frame for Organizational Managers

Organizational managers in Kindle and Blend refer to organizational perspectives on the handling of bad news as a salient feature in framing how they deal with challenges. Both groups consider a number of factors, including the organization's emphasis on a positive outlook and a legacy that discouraged any expression of concern from those lower in the hierarchy. While some managers in Kindle believe that issues are managed in a constructive way, others believe organizational members fear the consequences of delivering bad news. Thus organizational managers in Kindle expect information to be withheld by those lower in the hierarchy, and that the reporting of bad news will be delayed.

There is an apparent contrast between the two cases regarding the way organizational managers frame how uncertainty should be handled. While managers in Kindle are staunch supporters of risk management in their day-to-day operations, they appear to disregard these processes when framing appropriate actions for dealing with uncertainty on the IS initiative. For instance, risks were not formally discussed in two steering committee meetings attended by the researcher. In contrast, standard risk

management processes are used to frame how to deal with uncertainty by Blend managers. Risk management is therefore a standing agenda item for Blend team meetings.

5.7.3.2 Comparative Analysis of the Dealing with Challenges Frame for the IS Development Team

Surprisingly, the development team members in Kindle did not go into discussion on how issues on the IS initiative are handled, despite this initiative being positioned as *'challenged'*. This may have some bearing on the agile methodology, where the use of self-managed teams may alleviate much of the need to raise issues to a management level. In Blend, team members frame how to deal with issues they encounter in different ways. For instance, technical specialists frame how to deal with challenges on the basis of standards in the field of practice. Consequently, they face repercussions from those who base their framing of how to deal with challenges on organizational values and norms that encourage a positive outlook and discourage expressions of concern. These different perspectives raise *Process Contradictions* in the Blend team.

IS development team members frame how uncertainty should be dealt with in a similar way across both Kindle and Blend. While Blend enjoys the support of their managers for risk management of the initiative, once risks extend beyond the frame of reference of the Blend managers, the risk management approach becomes surreptitious. For instance, managing the risk of funding from organizational coffers involves more creative accounting than explicit reporting of risk. This approach has similarities with the way uncertainty is handled by the Kindle development team. Tactics like planning short delivery cycles are used to mitigate risk in an implicit way. Here, a surreptitious approach is imperative as there is an apparent lack of support for formal risk management processes. This framing may stem from the number of managers involved in the Kindle initiative, some of whom have long associations with the organization and affinity with some beliefs and behaviors that have a legacy as useful practice in the organization.

5.7.4 Enacting Agency Frame

This section compares differences and similarities between the Kindle and Blend cases in the way individuals frame the agency of technology. The comparison is done between each social group of the two cases. For example, I compare how Kindle managers frame the enactment of agency versus Blend managers. A summary of the *Enacting Agency* performing frame for both cases is available in attachment 9.12.

5.7.4.1 Comparative Analysis of the Enacting Agency Frame for Organizational Managers

Organizational managers in both Kindle and Blend draw on their understanding of the inherent capability of technology to shape organizational practice. In Kindle, managers recognize the *Technology Contradictions* arising from the poor fit of the technology with a South African product set in framing their understanding of the agency of the technology. They also demonstrate an appreciation of the susceptibility of this agency to the wielding of management authority; the agency in technology relies on practical enactment to realize its potential. In Blend, managers also consider the features and capability of the technology when framing leadership activities, like the motivation of their followers and the creation of

group identities. Similarly, some managers in Kindle use inherent values in the agile software development methodology to frame a leadership approach and actions. This framing raises *Process Contradictions* with other managers who align their framing of leadership practices with a waterfall approach to software development.

5.7.4.2 Comparative Analysis of the Enacting Agency Frame for the IS Development Team

There is a contrast between the two cases in the consideration by IS development team members of the agency in technology. In Blend, this agency receives no meaningful attention from the development team. In contrast, the development team in Kindle uses the agency in the new technology in several ways. Firstly, it's used to frame a new understanding of what skills are required by experts in the area, and who these experts are. Thus the status of existing specialists who don't possess these skills is altered, or even eradicated. Similarly, the aptitude of business users who lack understanding of the capability of the new technology is now called into question by the IS development team. Secondly, the values inherent in the agile software development methodology are used to frame the understanding of some of the development team of how software development should be done. Thus conflict emerges as a result of some developers using agile principles to frame development activities, while others use the principles inherent in the waterfall method.

5.7.5 Assessing Achievements Frame

This section compares differences and similarities between the Kindle and Blend cases in the way individuals frame how performance is assessed. The comparison is done between each social group of the two cases. For example, I compare how Kindle managers frame assessing achievements versus Blend managers. A summary of the *Assessing Achievements* performing frame for both cases is available in attachment 9.12.

5.7.5.1 Comparative Analysis of the Assessing Achievements Frame for Organizational Managers

Organizational managers on Blend and Kindle refer to organizational values and norms when framing their understanding of how performance is assessed. However, managers on Blend defer to norms related to their organizational sub-unit above the general organizational norms. They do this despite a belief that the sub-unit norms are prejudicial. Managers on Kindle also draw on past experience when framing how performance should be assessed. This may be related to the novelty of the Kindle undertaking, in terms of scale, complexity and risk to the organization. As such, relevant organizational norms are not available and managers need to refer to other sources for performance benchmarks.

5.7.5.2 Comparative Analysis of the Assessing Achievements Frame for the IS Development Team

IS development team members on Blend and Kindle seem to use contrasting frames to assess their performance. While individuals on Blend generally refer to defined success criteria, including short and long term measures, development team members on Kindle do not. Instead, these individuals frame their performance in terms of unmeasurable factors, like organizational values and professional pride. This framing may stem from the novelty and complexity of Kindle, where it has proved extremely difficult to

accurately estimate delivery targets. Faced with a real possibility of missing these targets, the Kindle IS development team members frame their performance instead on the basis of their inputs, rather than the outcomes of their efforts.

5.7.6 Conclusions from the Cross-case Analysis

The comparative analysis of the Kindle and Blend cases reveals a number of significant factors in the construction of the performing frames of organizational members. First, all three performing frames have relevance in both cases for organizational members, with the exception of the *Working at Being Best* frame, where *Enacting Agency* does not have relevance for the Blend IS development team. However, *Enacting Agency* is relevant for Blend organizational managers. Consequently, the conceptual model retains its relevance as an authentic abstraction of the activities of organizational managers and IS development teams during IS development in this empirical situation.

Second, organizational managers place a priority on the importance of organizational values and norms in their construction of all three performing frames. In contrast, IS development team members do not share a prioritization of organizational values in their framing. Notably, Kindle development team members deviate from these factors, considered important by the rest of the participants in the research study, in favor of deferring to factors related to the agile software development methodology.

Third, all participants in the study recognize the importance of relationships in their construction of performing frames. This is the only factor in the framing of performing frames shared by both organizational managers and the IS development team. Fourth, while IS development team members share the importance of autonomy in their *Leading* framing, there is misalignment here in the framing of *Leading* by organizational managers, relating to different views on collaboration and the appropriate approach to decision making. Fifth, while organizational managers share a consideration of existing organizational practice in framing how to handle bad news, the IS development teams frame their understanding differently. Here, both teams turn to standard practice in the software development methodologies in dealing with issues. However, while the agile method accommodates issue resolution within the development team, the waterfall method inadvertently leaves the Blend team more exposed to organizational practice, by requiring the communication of issues. The need for a surreptitious approach further informs the framing for *Dealing with Challenges* of both the development teams, attributable in part to a lack of shared support for risk management practice in the framing by organizational managers.

Finally, while the organizational managers share a consideration of the agency in technology when framing organizational practices like leadership, this is not the case for the IS development team. The Blend development team pays little attention to the agency in technology when framing their software development practices. In contrast, the Kindle development team uses the agency in the technology to redefine technical expertise, and the principles in agile software development to redefine the software development process. The cross-case conclusions are further summarized in attachment 9.13 to show similarities and differences between the cases.

5.8 Further Abstraction of the Concepts

At this stage in the analysis, the themes in the conceptual model were again revisited to check their distinctiveness or possible alignment with other themes in the data set or with concepts from related theory. This analysis resulted in a further abstraction of themes, as illustrated in Figure 39. The sub-theme *Working at Being Best* in ***Processes of Performing*** was renamed *The Doing*, while the sub-themes *Assessing Achievements* and *Defining Success* were merged into *Assessing Achievements* under the new sub-theme *The Done*. The theme ***Cultural Contradictions*** and the sub-themes *National Culture* and *Organizational Culture* were merged into the theme ***Cultural Context***. The adjusted conceptual model is presented in the next chapter as the theory of *Systems Development as Performing.*

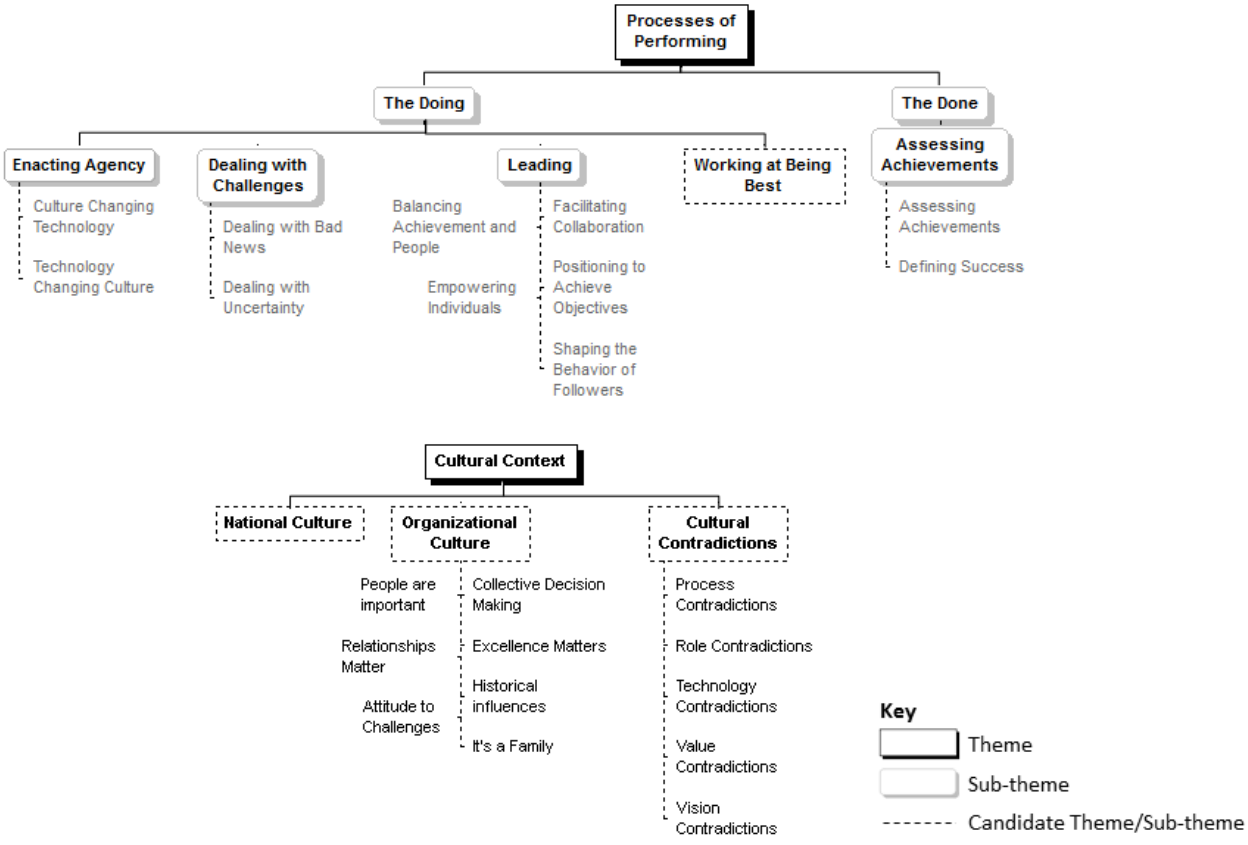


Figure 39. Further abstraction of the concepts in the conceptual model

5.9 Chapter Summary

This chapter describes the results of an analysis of the data collected for this research study. It begins by providing a context to the analysis in the form of background information. Pertinent information of South Africa is described, as well as information positioning the participating organization in the broader industry sector. A description of the history and objectives of each of the projects that represent the cases in this study, Kindle and Blend, is also provided.

The analysis begins with an examination of the organizational data and the identification of themes or patterns in the data using thematic analysis techniques. This is followed by a within-case analysis of the first case and the identification of themes in the data and relationships between the themes. This exercise

produces a conceptual model which then forms the basis for further interpretive theorizing, using frame analysis as a theoretical foundation. The results of a within-case analysis of each project are described and summarized, before a cross-case analysis is done to compare the results of the social groups from each case. A summary of these findings and cross-case conclusions are discussed, as a precursor to a further refinement of the conceptual outcomes from the analysis. Refinement of the concepts was necessary to check their distinctiveness or possible alignment with other themes in the data, or with concepts from related theory. The outcome of this exercise is further abstraction of some concepts and an adjusted conceptual model. This model provides the basis of the theory of *Systems Development as Performing*, to be discussed in detail in the chapter that follows.

6 DISCUSSION, PROPOSITIONS AND THEORETICAL ELABORATION

In this chapter I propose a new theory of information systems (IS) development, ***Systems Development as Performing*** (*sd-as-p*). The theory of *sd-as-p* is positioned as such on the basis of a conceptual model that is supported by derived propositions and reference to existing theory. Following the introduction where I explain the basic premise of the new theory, I go on to discuss each of the concepts in the theory and generalize each concept through propositions and theoretical elaboration.

6.1 Introduction

Developing an understanding of why IS development practice does not produce the anticipated outcomes has been historically difficult. A distinction between IS development as methods, tools and skills and IS development as purposeful performing in a particular context provides a way to explore and understand these difficulties. The basic premise of *Systems Development as Performing* (*sd-as-p*) is founded on the performance of IS development; that is to say *The Doing* of IS development (what do individuals do in the process of constructing a new IS solution and why do they do it) and *The Done* (how are the results of IS development efforts assessed and why are they assessed in the way they are).

As individuals perform IS development work they constitute *sd-as-p* in their particular context, while at the same time their actions are shaped by their previous enactments of *sd-as-p*. Thus, individuals constitute and reinforce *sd-as-p* through the recurrent practice of IS development (Orlikowski, 2008). In common with a practice perspective, *sd-as-p* makes no assumptions about the stability, predictability or completeness of the IS development practices (Orlikowski, 2008). Instead, it privileges a focus on the performance of IS development as individuals interact in a particular context (Orlikowski, 2008). In common with the approach of other researchers of IS phenomena as practice (Newell, 2015; Marabelli & Galliers, 2017) the focus of the theory is on understanding everyday performances in IS development, including their context, purpose and processes. Consequently, attention is shifted from the content of IS development, like methods, skills and tools, to the enactment of the processes incumbent in performing IS development. In the rest of this section, the concepts in the theory are discussed and generalized through derived propositions and theoretical elaboration.

6.2 The Theory of Systems Development as Performing

The theory of ***Systems Development as Performing*** (*sd-as-p*) is illustrated in Figure 40.

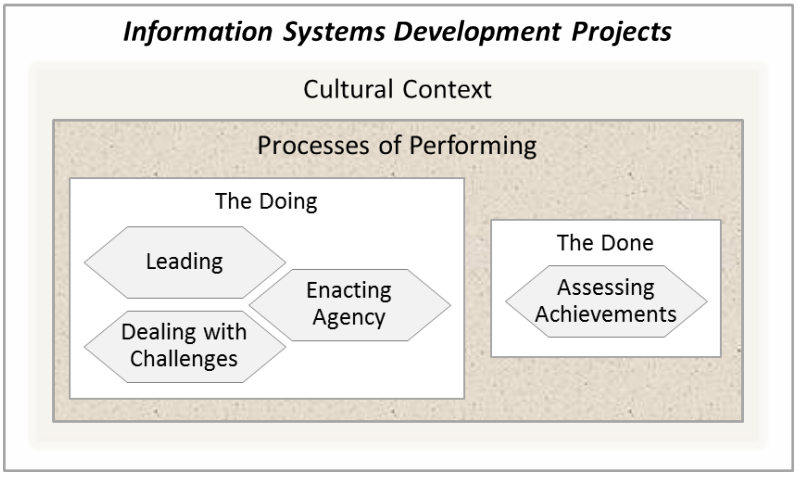


Figure 40. The theory of Systems Development as Performing

The discussion that follows is structured around the concepts in the theory of *sd-as-p.* The relationship between secondary research questions, propositions and concepts in the theory is illustrated in Figure 41.

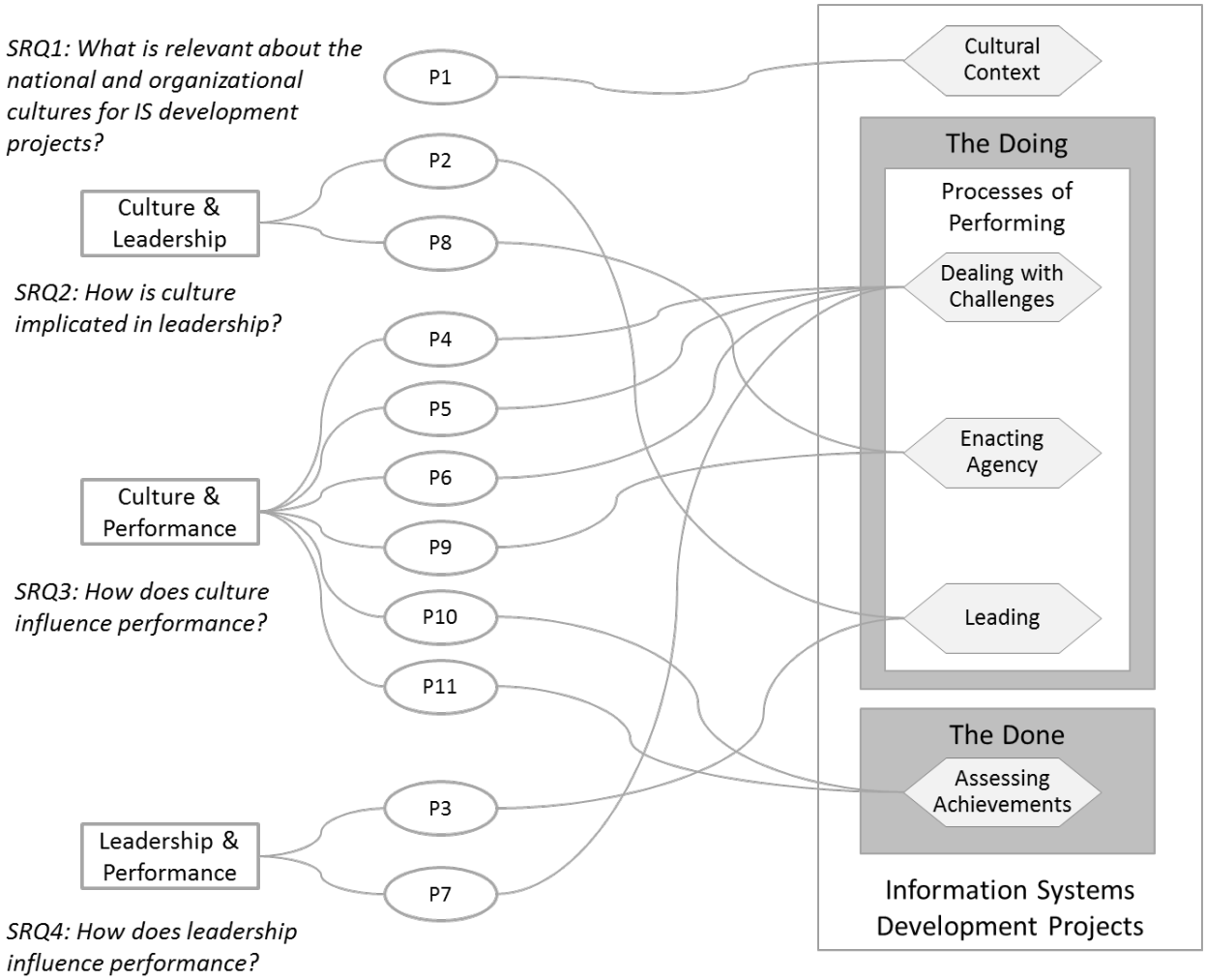


Figure 41. The relationship between secondary research questions, propositions & theoretical concepts

6.2.1 Cultural Context

The concept ***Cultural Context*** encapsulates the assumptions, beliefs and values emanating from different cultural levels that contextualize the actions and behavior of organizational members. The ***Cultural Context*** represents a complex and dynamic mix of national, organizational and professional cultural influences. Together these provide a pool of cultural resources which individuals can draw from to make sense of situations and choose paths of actions (Benford & Snow, 2000).The elements of national culture influencing the behavior of individuals within the empirical situation are related to organizational efforts to enact economic transformation and introduce ethnic diversity into the workforce. Varying beliefs on the effect, nature and pace of transformation exist in the organization, creating potential for a misalignment of the frames of reference between different social groups.

FinSect has a long and successful history in the industry in which it operates; it has been the market leader for many years and has received numerous accolades throughout its history. These achievements over so many years are a source of pride for organizational members and a position they strive to maintain. Being a part of these achievements leads organizational members to feel that they represent the best talent in the industry. The focus on achievements is coupled with an emphasis on '*excellence*' as a core organizational value, in organizational slogans and posters and office decor. Organizational members are aware of an expectation to excel, and this becomes a dominant factor in framing an understanding of how to act in different situations. Seemingly concomitant with a focus on excellence is a low tolerance for mistakes within the organization and a reluctance to communicate bad news. The organization is also characterized by respect for organizational hierarchies and decision making at the top levels of organizational structures. Additionally, organizational practices and norms established decades previously, like deference to authority and existing practices are well entrenched in certain areas. To safeguard personal and professional reputations against the possibility of mistakes in this environment, accountability for decisions is shared by engaging in collective decision making. Organizational members believe the organization to be supportive and nurturing, that the organization counts on its members and that it will look after them. The long service records of many organizational members are testament to this view. Additionally, individuals commonly use a '*family*' metaphor to describe the organization, alluding to a close relationship among organizational members. The importance afforded to relationships is a key factor framing an understanding of how to behave in the organizational context.

The ***Cultural Context*** is not homogeneous. Rather, it is replete with the *Cultural Contradictions* that arise in social interactions as a consequence of different stakeholders, both individuals and groups, holding different values, beliefs, norms and practices. Contradictions also arise through a mismatch of the values embedded in different levels of culture and the values embedded in technology. Importantly, these contradictions represent the differences that make a difference to the efficiency or effectiveness of social interactions and can serve as cues to the alternate framing of situations by different social groups. In this

research study there is evidence of five types of contradictions; vision, value, role, process and technology each of which contributes to the ***Cultural Context*** of IS development.

Vision Contradictions arise from situations where there is misalignment of the goals of different stakeholders involved in IS development. This can emerge as a result of misalignment between organizational strategy and views on how the strategy should be implemented. Additionally, complexities inherent in IS development create difficulties in clearly articulating a vision, leaving stakeholders with different interpretations of what the final IS solution should look like.

Value Contradictions arise from different value systems held by individuals and groups. For example, the emphasis in the organization on financial gain challenges organizational values regarding the importance of people. Amongst the IS development team meeting delivery commitments is a high priority, while business stakeholders put priority on business continuity and delivery of the promised solution. Similarly, organizational values like '*excellence*' creates specific challenges in the IS development context. Some organizational members believe the solution should be perfect before it is delivered, while others believe a working solution should be delivered with improvements coming later.

Role Contradictions can impact the harmony of social interaction when beliefs and assumptions about roles differ. Uncertainty concerning the contribution from different individuals towards the development effort, or a lack of appreciation for the value of specialist skills, impacted the functioning of the IS development team on occasions.

Process Contradictions arise through the need to adjust organizational procedures to meet specific IS development requirements. For instance, the use of an agile rather than a waterfall software development methodology requires acceptance and new thinking at multiple levels within the organization. Additionally, circumstances particular to IS development projects, like pressure to meet delivery commitments often calls for adjustments to standard organizational practice. In the case of Kindle, it was necessary to move away from the organizational practice of collective decision making in the interests of meeting schedule commitments. Conversely, the pressure exerted by the organization to meet development milestones created pressure to deviate from generally accepted IS development practice.

Technology Contradictions emerged in this study as a result of the gap between the nature and functionality of the IS solution and the experience, requirements and expectations of organizational members. In the case of Kindle the procurement of a North American product not only proved to be a problematic fit to the South African business environment, but the conversion from a custom built IS solution to a package solution introduced further misalignment. Furthermore, technical considerations like the architecture of existing systems and the knowledge and experience of existing IT professionals created misalignment with other organizational stakeholders. The IS development context as described here gave rise to the following proposition:

P1 *WHEN organizational members participate in IS development initiatives THEY CAN experience a mismatch in values, beliefs, norms and practices between the visions, values,*

roles, processes and understanding of technology of different members and groups AND these differences can create difficulties in performing IS development activities.

Cultural contradictions in the cultural context that lead to difficulties for IS development teams have been revealed in numerous empirical studies. For instance, value contradictions have been shown to create disparity in the development of meaning and understanding (Avison & Banks, 2008) and arise from different values systems held by different professional groups (Iivari & Huisman, 2007) or by different organizational sub-units (Leonardi, 2011). Value contradictions also arise through different attitudes to hierarchy, status, power and control (Levina & Vaast, 2008; Martinsons *et al.*, 2009; Pscheidt, 2011). Process contradictions have emerged from a misalignment over the prioritization and organization of work (Rai *et al.*, 2009; Suri & Abbott, 2013) and through different preferential behaviors in communication practices (Dysart-Gale *et al.*, 2011). Technology contradictions have been shown in the mismatch of values embedded in societal cultures and the values embedded in technology (Barzilai-Nahon & Barzilai, 2005; Barendregt, 2008; Sia *et al.*, 2009; Waring & Skoumpopoulou, 2012), through a misalignment of organizational values and the values embedded in a technology (Kaplan, 2011; Koch *et al.*, 2013), or through poor technological support of existing organizational practices (Boersma & Kingma, 2005; Clemmensen, 2012). This research study extends the notion of cultural contradictions to include disparity in views related to IS development roles and the vision of different stakeholders in the IS development effort.

6.2.2 Processes of Performing

Processes of Performing represents the performances individuals engage in as they go about the business of IS development. Performance is understood to be an interpretive event occurring in everyday life that has a purpose, a setting and involves actors and interactions (Denzin, 2003). Performance in the context of this study is taken to be both the act of performing (the '*doing*') and the outcome of performance (the '*done*') (Denzin, 2003). *The Doing* processes in *sd-as-p* conceptualize performance "*as something to do, or go through; as a way to develop a set of skills; as a methodology, ...; as a way of knowing; and as a way of being*." (Denzin, 2003:28). *The Done* process in *sd-as-p* conceptualize a performative view on the outcome of performance, where the focus moves attention away from definitions of success or failure to a focus on how success or failure become to be defined as such (Cecez-Kecmanovic *et al.*, 2014). ***Processes of Performing*** thus puts a focus on the practice of IS development in this empirical situation.

Conceptualizing performance as a process does not imply in this instance that performing (*The Doing*) precedes performance (*The Done*). In fact, performance in this study recognizes that *The Done* process (*Assessing Achievements*) can occur at any time with varying outcomes throughout the IS development lifecycle (Fincham, 2002). It is important to note that ***Processes of Performing*** does not represent an exhaustive description of IS development practice. Instead, I assume the argument offered by Orlikowski (2008) and acknowledge that the purpose, experience, knowledge and adaptive nature of individuals endows IS development with a multiplicity of practices. Hence, ***Processes of Performing***

encapsulates only those IS development practices salient to the participants in this research study, but nevertheless is representative of IS development in certain contexts. Notwithstanding this conceptual boundary, the performances claimed as constituting ***Processes of Performing*** in this theory can reasonably be expected to occur in most IS development initiatives.

Processes of Performing also represents the framing used by individuals to make sense of situations and guide the subsequent choice of behavior and action which constitute their performance. In the sensemaking process, individuals draw on cultural resources that include their assumptions, beliefs, societal norms and past experience in their efforts to understand what is happening (Weick, 1995; Maitlis & Christianson, 2014). Each situation is thus interpreted using a particular frame of reference shaped by the cultural resources the individual has drawn on and action is taken based on that interpretation. Effectively, these frames of reference define the set of interpretive schemes, processes and practices used by individuals to perform their IS development duties. Thus the possibility is always present for different individuals and social groups to interpret the same situation differently, with consequences for the behavior that follows. In this way, the ***Processes of Performing*** are influenced by cultural factors.

The action that follows the sensemaking process has no meaning on its own. Rather, meaning is acquired as action is augmented with processes and the experience of others involved in the social interaction (Küpers, 2017). Hence, actions taken during the performance of IS development are shaped by the understanding of individuals, and this understanding is continually adjusted to accommodate situations encountered during social interaction. Thus ***Processes of Performing*** are fluid, emergent and contextually bounded (Hsu, 2009). Consequently, similarity in behavior may be observed between different individuals or social groups in similar situations, but differences are also apparent. Similarly, differences in behavior may be observed by the same individuals or groups at different times. In this research study, the organizational managers and IS development teams associated with each case have been shown to construct similar frames of reference in some situations, and dissimilar frames in others. The construction of different frames by different social groups is aligned with the notion of frame misalignment (Goffman, 1974) where different interpretations of reality create different frames of reference. Frame misalignment offers an explanation then for the differences evident in the ***Processes of Performing*** between different social groups in this study. Each of these ***Processes of Performing*** is discussed further in the sections that follow.

6.2.2.1 The Doing

The Doing conceptualizes the processes and practices performed by individuals and social groups during the development of the IS solution. It consists of three concepts; *Leading*, *Dealing with Challenges* and *Enacting Agency*.

6.2.2.1.1 Leading

Leading conceptualizes the performance of organizational and IS development leaders, as they make sense of situations arising during IS development and act on their interpretation of events. In FinSect relationships matter; it is the only organizational value that organizational managers and IS development team members share in framing their understanding during the performance of IS development. The value is also implicit in other organizational values like '*people are important*' or '*fairness*' and manifests in metaphors in common usage in the organization like '*It's a family*' or '*It's in the DNA*', suggesting close relationships among organizational members. Some organizational members believe that building and maintaining relationships plays a more vital role than individual competence in organizational activities, and credit organizational success to successful relationship management. Leaders in Kindle and Blend support the importance of relationships to successful IS development and align their leadership behavior accordingly. The support for an organizational value aligned to a value considered important in IS development leads to the following proposition:

> *P2* *WHEN organizational managers and IS development teams engage in software development THEY consider dominant organizational values AND organizational managers adjust their behavior WHILE IS development teams adjust their behavior when organizational values align with professional values*

Research indicates that IS workers outside the IT industry identify more strongly with the IS profession rather than the organization (Gannon, 2013). The importance of relationships to IS development is well supported in the academic literature. The work of IS development relies on a meaningful contribution from all participants to enhance the chances of a successful outcome (Adolph *et al.*, 2012). Collaboration among project stakeholders is therefore important, and the leader is considered responsible for orchestrating and integrating the expertise in the team and the relationships between individuals (Mumford *et al.*, 2002). For example, improving employee relationships proved an important intervention in the successful implementation of a digitally enabled social network (Koch *et al.*, 2013). In new world leadership thinking power comes from the interactions that occur during social processes (Longo & Gibson, 2011; Parry, 2011). The leadership power that comes from relationships (Parry, 2011) can be particularly useful in project environments, where leaders often lack the formal authority implicit in organizational hierarchies.

Organizational managers are divided in their leadership practice in respect of adhering to the principles of collaboration and the empowerment of individuals. While organizational managers on both Kindle and Blend support these values, in practice collaboration and empowerment are not always achieved. In these cases organizational managers revert to longstanding norms within the organization and IS development team members experience a lack of collaboration and an authoritative style of leadership. Consequently, there is a reluctance to engage in discussion or raise concerns from staff at relatively junior levels who nevertheless are often specialists in their field. This creates a problematic scenario as details known and understood by specialists may not be shared more broadly and may be influential contributors to the performance of the IS development team. Principles in the agile software development methodology

have supported a more collaborative and autonomous environment for the Kindle team and this is considered an important contributor to their productivity. This required the purposeful initiation of new ways of working, including the introduction of new values, captured in slogans and put on display in the office surrounds. The effects of autonomy on the performance of IS development teams leads to the following proposition:

P3 WHEN IS development team members are given autonomy THEY collaborate and become more productive in their development efforts

An organization with a long legacy of success poses some challenges to IS development projects. Leaders of successful organizations may attribute success to themselves and the processes and procedures they've put in place, and discount contributions emanating from sources like simple good fortune (Weick & Sutcliffe, 2001). Importantly, this success can build confidence in a single way of doing business, in the efficacy of existing skills and practices, and result in intolerance to opposing points of view (Weick & Sutcliffe, 2001). This negative consequence of success is especially challenging in IS development project environments where the novelty of the undertaking and the uncertainty associated with this may require new and innovative ways to get the job done. Additionally, participants in innovative initiatives are generally specialists, accustomed to autonomy in their work situations (Mumford *et al.*, 2002). Furthermore, in complex environments with high levels of uncertainty like IS development projects, decisions are best made by experts or those with the most experience of the situation, regardless of their position in the organizational hierarchy (Weick & Sutcliffe, 2001). Collaboration and autonomy thus become important contributors to successful outcomes from the IS development effort.

6.2.2.1.2 Dealing with Challenges

Dealing with Challenges conceptualizes the performances enacted by organizational managers and IS development team members as they encounter complications in the course of their IS development work. Historically, FinSect has discouraged expressions of concern, especially at lower rungs of the organizational hierarchy. Coupled with this history is a prominent element in the organizational culture that values a positive outlook. This ***Cultural Context*** creates some challenges in formulating appropriate responses to issues that emerge in day to day business operations. Senior managers in FinSect believe the historical context has been relegated to history, and that today the organization values contributions, good or bad, from any organizational member who has insight into a situation. Consequently, they expect organizational members to be forthcoming with challenges or unwelcome news and in this way facilitate appropriate and timeous responses on their part. In practice however, the delivery of bad news is usually delayed. The IS development team members still face negative reactions when raising issues. Action that may result in reputational damage is particularly concerning for organizational members in FinSect, as the organization demonstrates a high regard for excellence. Consequently there is a reluctance to communicate bad news. Instead, information regarding the IS development effort is usually presented in a positive light. The failure by the IS development team to provide a balanced view of project performance

and the tendency to delay the delivery of bad news is recognised by senior managers and leads to a breakdown in trust. This approach to dealing with bad news leads to the following two propositions:

P4 *WHEN excellent performance is prioritized as an organizational value AND organizational managers over-emphasize a positive outlook THEY CAN react negatively to receiving bad news*

P5 *WHEN excellent performance is prioritized as an organizational value AND IS development teams encounter difficulties in environments that over-emphasize a positive outlook THEY CAN delay the communication of bad news AND a breakdown in trust can occur.*

Project managers prefer to delay the reporting of bad news to allow them to gather more information before advancing a potentially erroneous assessment of a situation (Denyer *et al.*, 2011). This behavior is often encountered in IS development projects and has been recognised as a contributing factor to poor performance (Keil *et al.*, 2007). Social behavior is also strongly influenced by the need to save face (Keil *et al.*, 2007). If individuals see others chastised for delivering bad news they will strive to avoid a similar situation. Delivering bad news can also raise questions regarding the competence of the messenger; in extreme cases individuals can face severe personal consequences, like job loss (Kutsch *et al.*, 2013). Should individuals fear the consequences of delivering bad news, their fears can manifest as optimistic bias in project status reports (Keil *et al.*, 2007). Poor quality reporting has been linked to poor project performance (Keil *et al.*, 2007), thus overcoming the inclination to withhold bad news becomes an important factor in improving project outcomes. Additionally, behavior that causes a breakdown in trust has negative consequences for IS development teams where high levels of trust are beneficial to team performance (Rai *et al.*, 2009; Lowry *et al.*, 2010).

IS development projects are characterized by high levels of social and technical interdependence. Thus errors in processes or practices can quickly escalate into significant events and compromise performance of the project (Denyer *et al.*, 2011). These circumstances create a need to manage risk to improve the reliability of performance. Yet in contrast to the robust management of risk adopted by FinSect to deal with uncertainty in day-to-day business operations, formal risk management is not well supported on IS development initiatives. An explanation for this lack of support lies in the emphasis the organization places on projecting a positive outlook. In response to the constraints the ***Cultural Context*** imposes on the formal management of risk, IS development teams on both the Kindle and Blend initiatives prefer to use less overt more surreptitious methods to manage uncertainty in the development effort. In these instances, individuals have shaped their risk management approach to accommodate the organizational culture. Although deviating from accepted practice, their activities do contribute to addressing uncertainty in the project environments and offer an alternative explanation for an apparent disregard for the management of project risk. For instance, IS development team members use relationships to facilitate the circumvention of processes if this becomes necessary to achieve objectives. Schedule commitments are kept deliberately short to mitigate the uncertainty of meeting milestones and project structures are created

to deflect risk management activities into more acceptable decision making forums. The ***Cultural Context*** described here gives rise to the following two propositions:

P6 *WHEN organizational managers over-emphasize a positive outlook THEY CAN discount the uncertainty inherent in IS initiatives AND fail to support the formal management of risk.*

P7 *WHEN IS development teams face situations of uncertainty in environments that over-emphasize a positive outlook THEY CAN put consideration of dominant organizational values before conventional practice AND adopt surreptitious practices to achieve their objectives.*

A lack of formal support for risk management is a common feature of many IS projects (Denyer *et al.*, 2011). The lack of support can emanate from concern that suggestions of potential future problems may jeopardize relationships or indicate incompetence (Kutsch *et al.*, 2013). Furthermore, managers of successful organizations like FinSect can come to believe in the efficacy of their existing processes (Weick & Sutcliffe, 2001) and resist suggestions that these may not be effective in a project context. In situations where the contextual environment is not ideal for exercising risk management practices, project managers can disengage from risk management activities (Kutsch *et al.*, 2013). For instance, if accepted risk management practices in the organization are unsuitable for a particular project, risks may remain untreated. Alternatively, project managers can make use of more informal or tacit approaches to risk management (Kutsch *et al.*, 2013). This separation of practice from accepted risk management procedures is a common occurrence on IS projects (Kutsch *et al.*, 2013). Furthermore it illustrates the concept of '*practical drift*', described as "...*the slow uncoupling of practice from procedure*..." (Snook, 2000:24). Practical drift arises when governance procedures and rules don't accommodate the actual work environment (Snook, 2000). Individuals make adjustments to existing procedures in their efforts to make sense of the situation and get the job done. In tightly governed, rule based environments such as those that contextualize IS development projects, practical drift is considered inevitable (Denyer *et al.*, 2011). The concept thus offers further insight into the fluidity in the observed practice of IS development (Dittrich, 2016).

6.2.2.1.3 Enacting Agency

Enacting Agency conceptualizes the influential interplay of culture and technology in the performance of IS development. The technology solutions developed in the Kindle and Blend initiatives are shaped by the interaction with humans in this particular social context, while the social context itself is adjusted to accommodate an emerging understanding of the nature of the new technology. Organizational managers use the inherent culture in technology to inform their leadership choices and actions. This technology culture manifests as perceived inherent values and capability built into the technology solution (Leidner & Kayworth, 2006; Waring & Skoumpopoulou, 2012). Organizational managers use the culture embedded in the new technology solution to provide cues and guidelines for decisions on the role the technology will play in their business operation and use their authority to adjust organizational practice to match the dictates of the new technology solution. For instance, organizational managers recognize how the technology agent can contribute to fulfilling certain leadership functions. Firstly, the technology can

play a role in constituting identity by contributing to an individual's understanding of who they are and what their capabilities are. By acting as an enabler of potential, the new technology solution offers opportunity which individuals can leverage. Secondly, the new IS solution could assist by contributing to employee wellbeing and development. The opportunity the technology presents through the automation of many mundane and rote activities can help retain and motivate valuable staff by freeing individuals to apply their skills to the more challenging specialist tasks. Thirdly, leaders recognize that the common '*language*' and jargon inherent in the technology solution itself could act as a unifying device. By introducing a solution that multiple unit's in the larger group of companies could use, individuals and groups could be united through that common experience. Finally, senior managers used principles inherent in the software development methodology in a similar fashion to support emerging expectations of organizational leaders. These organizational managers support principles of collaboration and the empowerment of individuals inherent in the agile software development methodology which represent a departure from conventional practice in the organization. An appreciation of the capability inherent in the new IS solution encourages organizational managers to support adjustments to existing organizational practice that facilitate the leveraging of the opportunities presented. Similarly, organizational managers recognize that they can use their authority to manipulate the technology in ways that suit their existing business practices. For instance, organizational managers used their authority to impose technology design decisions aligned to their existing knowledge and experience. The use of authority by organizational managers to manipulate the technical environment gives rise to the following proposition:

P8 *WHEN organizational managers assess the values inherent in new IS solutions and new software development methodologies THEY CAN use their authority to adjust either existing practice or the new IS solution to suit their leadership agendas.*

The dynamic interplay between culture and technology is well supported in the existing literature. Studies have shown how the technology or the way the technology is used can be adapted to suit the culture. For instance, a Jewish orthodox community was able to circumvent expected resistance to new technology by adjusting the way in which the internet was used. This prevented possible dissent in the community that could have been damaging to their traditional structures. Instead, the adjustments to internet usage have preserved some traditional practices, while also changing and strengthening others (Barzilai-Nahon and Barzilai 2005). In contrast, other studies show how the culture is adapted to better suit the technology. For example, an organization used a combination of interventions to address organizational policy, employee relationships and leadership approach to improve alignment between the organizational culture and their social media sites during implementation of a digitally enabled social network (Koch et al. 2013).

The literature also supports the notion that meaning and materiality are simultaneously created through the enactment of everyday practice. In this research study for instance, organizational leaders recognize how the inherent capability in the new IS solution satisfies emerging expectations of organizational leaders. Similarly, Kaplan (2011) demonstrates how the capabilities inherent in PowerPoint

facilitated collaboration in strategy making in an organization. The technology became an actor in strategy making practices by virtue of its ubiquitous nature and the manner in which it facilitated collaboration, negotiation and the adjudication of decisions. Furthermore, there is support in the literature for the notion the technology encapsulates symbolic elements in everyday practice. Technology has been shown to unify individuals by representing aspects of their lives that are held in common (Goggin 2008). Individuals can also attribute meaning to technology and in this way technology can become an important determinant in the search for solutions (Leonardi 2011). And in Australia and Indonesia the mobile phone serves as a symbol of modernity, by providing a modern means of engaging in established social practices and norms (Barendregt 2008; Goggin 2008).

The status of specialists or experts can be affected by an *Enacting Agency* frame when the capability inherent in the technology plays a role with regard to who should make technical decisions. For instance, decisions regarding the look and feel of the new user interface moved from one specialist business area to another, effectively reducing the power over the technology solution previously enjoyed by those that originally had decision making powers. Similarly, the introduction of the new technology changed the nature of the technical skills now required in the IS development team. This lack of expertise in the context of the new technology caused a change in the status of those technical specialists who were experts on the old technology. Technical experts recognize the challenge the new technology presents to their position in the organization and can use their existing status and technical expertise to adjust the new technology solution to better align with their own knowledge and experience. For example, the need for a large portion of redevelopment necessary on the Kindle initiative is credited to the failure of organizational managers and technical specialists to recognize the inherent capability of the technology solution. An alternative and equally plausible explanation is a deliberate effort on the part of technical specialists to align the new solution with their existing technological expertise. The influence of technical experts in the development of new technology solutions leads to the following proposition:

P9 *WHEN IS development teams encounter new technology THEY CAN recognize that the new technology is a challenge to their status as experts AND adjust the technology to suit their expertise*

Direct support for this proposition could not be uncovered in a search of the research published in the leading journals (see Table 24) over the last 10 years. However, in a study of IS developers exposed to a new software development methodology, Iivari and Huisman (2007) found that a perception from developers that the new methodology did not support values important to them was likely to result in opposition to the new methodology. Similarly, it is suggested that when IS developers frame their organizational status on the basis of their technological expertise, they are unlikely to support a technology change that undermines their status.

6.2.2.2 The Done

The Done conceptualizes how the practices performed by individuals and social groups in developing IS solutions come to be assessed in the way they do. It consists of a single process, *Assessing Achievements*. Most of the organizational managers in Kindle and Blend assessed performance of the IS initiatives by referring to dominant cultural values in the organization. Thus the organization's focus on efficiency is evident as an important element in the ***Cultural Context*** for performance assessment. However, this context is adjusted under certain conditions, through a shift in the primacy of efficiency as a measure of success. Organizational managers of the less complex initiative extend the measures of success to include broader objectives of the organizational sub-unit funding the project. In contrast, organizational managers of the more complex initiative temper the accepted efficiency measures by considering the difficulties of the undertaking. In these situations, managers draw on past experience and question the suitability of assessment criteria in light of practical difficulties encountered during the development effort and as the nature of the development outcomes become apparent. These managers shift the focus of their performance discussions instead from efficiency to effectiveness criteria, like user adoption of the new solution and business sustainability. Additionally, assessment criteria are adapted over time as the development effort unfolds to accommodate the experienced nature of the IS development outcomes.

While IS development team members recognize that standard measures of IS development like time, cost and quality are important to some stakeholders, this is not the primary consideration when these individuals assess performance. Their perspective on success is broadly focused on longer term objectives and measurement criteria related to sustainable business benefits, within the context of prevailing organizational values. Assessment criteria within this broader context are however subject to more localized contextual adjustments. For instance, strong organizational values like an expectation of '*excellence*' in FinSect establish performance benchmarks that need to be addressed by IS development teams. Consequently, the IS development team uses the context of the development effort to account for adjustments to expectations of excellence in their performance. As an example, the Kindle IS development team contextualized their achievements through references to the complexity of the work and adjusted performance benchmarks to better reflect the specifics of the IS development effort. Kindle team members thus assess their performance against principles inherent in the agile software development methodology and the achievements of past, similar initiatives. The influence of culture and the contextual environment on the assessment of performance by organizational managers and IS development team members described here leads to the following two propositions:

P10 *WHEN organizational managers assess the performance of IS development teams THEY draw on dominant organizational values AND adjust their assessments to accommodate the prevailing context when dealing with relatively complex IS solutions AND adjust their assessments to defer to localized values for less complex initiatives*

P11 *WHEN IS development teams assess their performance THEY CAN consider the long term objectives of the development initiative AND privilege context specific measures above*

conventional success measures in relatively complex IS initiatives AND defer to conventional success measures in less complex situations

Cultural factors and the unique particulars of each IS development project come into play in the assessment of performance by participants in this research study, and these assessments differ between social groups. This is in line with the view proposed by Fincham (2002) that notions of success or failure are the result of sensemaking and interpretation. Consequently, assessments are subjective and they can change throughout the project lifecycle (Fincham, 2002). In contrast to this view, a rational perspective of performance assessment assumes that IS development project success / failure exists as a discrete state and can thus be objectively measured (Cecez-Kecmanovic *et al.*, 2014). Both these perspectives present a representational view of success or failure, which has since been challenged by proposals to acknowledge the agency of information systems and IS projects in success / failure assessments (Cecez-Kecmanovic *et al.*, 2014). Thus Cecez-Kecmanovic *et al.* (2014) propose that different sociomaterial practices can produce different IS assessments, revealing the presence of multiple, concurrent, and potentially competing realities of IS assessment in different social groups. This latter perspective more closely describes how the concept of *Assessing Achievements* is related to the empirical data in this study. Furthermore it offers an explanation for the disparate perspectives from organizational managers and IS development team members on the performance of the projects in this research study.

6.3 Chapter Summary

This chapter discusses each of the concepts in the theory of ***Systems Development as Performing*** *(sd-as-p)* and generalizes each concept through derived propositions and theoretical elaboration. A summary of the propositions and their relationship to the research questions and the theoretical concepts in the theory of *sd-as-p* is provided in Table 19. The Idiographic data supporting each proposition is provided in attachment 9.14.

SRQ1: What is the relevance of national and organizational cultures for IS development projects?	
Proposition	Theoretical Concept
P1 WHEN organizational members participate in IS development initiatives THEY CAN experience a mismatch in values, beliefs, norms and practices between the visions, values, roles, processes and understanding of technology of different members and groups AND these differences can create difficulties in performing IS development activities.	Cultural Context
SRQ2: How is culture implicated in leadership?	
Proposition	Theoretical Concept
P8 WHEN organizational managers assess the values inherent in new IS solutions and new software development methodologies THEY CAN use their authority to adjust either existing practice or the new IS solution to suit their leadership agendas.	Enacting Agency
P2 WHEN organizational managers and IS development teams engage in software development THEY consider dominant organizational values AND organizational managers adjust their behavior WHILE IS development teams adjust their behavior when organizational values align with professional values.	Leading
SRQ3: How does culture influence performance?	
Proposition	Theoretical Concept

P10 WHEN organizational managers assess the performance of IS development teams THEY draw on dominant organizational values AND adjust their assessments to accommodate the prevailing context when dealing with relatively complex IS solutions AND adjust their assessments to defer to localized values for less complex initiatives.	Assessing Achievements
P4 WHEN excellent performance is prioritized as an organizational value AND organizational managers over-emphasize a positive outlook THEY CAN react negatively to receiving bad news.	Dealing with Challenges
P6 WHEN organizational managers over-emphasize a positive outlook THEY CAN discount the uncertainty inherent in IS initiatives AND fail to support the formal management of risk.	Dealing with Challenges
P11 WHEN IS development teams assess their performance THEY CAN consider the long term objectives of the development initiative AND privilege context specific measures above conventional success measures in relatively complex IS initiatives AND defer to conventional success measures in less complex situations.	Assessing Achievements
P9 WHEN IS development teams encounter new technology THEY CAN recognize that the new technology is a challenge to their status as experts AND adjust the technology to suit their expertise.	Enacting Agency
P5 WHEN excellent performance is prioritized as an organizational value AND IS development teams encounter difficulties in environments that over-emphasize a positive outlook THEY CAN delay the communication of bad news AND a breakdown in trust can occur.	Dealing with Challenges
SRQ4: How does leadership influence performance?	
Proposition	Theoretical Concept
P7 WHEN IS development teams face situations of uncertainty in environments that over-emphasize a positive outlook THEY CAN put consideration of dominant organizational values before conventional practice AND adopt surreptitious practices to achieve their objectives.	Dealing with Challenges
P3 WHEN IS development team members are given autonomy THEY collaborate and become more productive in their development efforts.	Leading

Table 19. Research questions, propositions and theoretical concepts

The thesis is concluded in the chapter that follows with a discussion of the contribution of this thesis to theory and practice and suggestions for further research.

7 CONCLUSIONS

While there appear to be indications that information systems (IS) development is improving in respect of meeting time, cost and quality measures, there remains room for improvement. Of the many factors that can contribute to the difficulties faced by IS development teams, the potentially insidious influence of factors like culture and leadership have received relatively little attention from IS scholars. Consequently, research answering the primary and secondary research questions listed below was expected to improve understanding and offer explanations concerning the influence of culture and leadership on the performance of IS development teams.

How are culture, leadership and performance implicated in information systems development?

SRQ1: What is relevant about the national and organizational cultures for IS development projects?

SRQ2: How is culture implicated in leadership?

SRQ3: How does culture influence performance?

SRQ4: How does leadership influence performance?

An interpretive approach to the research with a hermeneutic mode of inquiry allowed the building of an explanatory theory. By selecting an organization from the financial services industry to participate in the study I was able to leverage my practical experience of information systems in the financial services sector; familiarity with systems in use in this sector eased the path to understanding. The case study was used as the investigative method in the research, allowing face-to-face interaction and providing opportunities for experiencing the lived experience of the practitioners in the empirical situation. The choice of two IS projects as the cases in this research allowed the comparison of two cases in similar circumstances. Additionally, the inclusion of managerial and non-managerial participants in the study enabled the examination of culture from multiple perspectives. This provided broader insight and facilitated the development of understanding. The validity of the findings was strengthened by incorporating a variety of data sources including interviews, observation, archival document and photographs. Thematic analysis revealed important themes or patterns in the data and the relationships between them, contributing towards the generation of an initial conceptual model. This model then provided a basis for further interpretive theorizing using frame analysis as the theoretical foundation. The result is a theory of ***Systems Development as Performing*** (*sd-as-p*) and a set of propositions intended to expose the emergent theory to future empirical testing.

7.1 Research Contributions to the IS Field

7.1.1 Theoretical Contributions

There are three main theoretical contributions from this research. The first is a conceptual model derived from literature representing an explanatory theory of how culture is implicated in IS development; ***Cultural Implications in Information Systems Development*** (*CIISD*). The theory of *CIISD* is explicated in section 2.3.2 of this thesis. The second theoretical contribution is a conceptual model derived from an

empirical case study representing a theory of the practice of IS development; ***Systems Development as Performing*** (*sd-as-p*). Finally, the research yielded a set of propositions derived from the theory of *sd-as-p* that provide a basis for further research into IS development. Further discussion regarding these three contributions follows. For each theory (*CIISD* and *sd-as-p*), details of how they contribute to the substantive domain is described and each theory is assessed on the basis of the four elements that constitute a theory; 'what', 'how', 'why' and 'limiting conditions' (Whetten, 1989). Following this discussion, the IS development dimensions and knowledge areas of Hassan and Mathiassen (2018) are used to substantiate the relevance of the propositions emerging from this research.

7.1.1.1 Cultural Implications in Information Systems Development (*CIISD*)

The theory of *CIISD* emerged from a review of key publications in the IS literature addressing culture and IS development. Literature reviews make a contribution to knowledge by implementing different types of knowledge conversion (Schryen *et al.*, 2015). By explicating a new theoretical explanation of culture and IS development (ISD), existing explicit metaknowledge of IS and culture (journal articles exploring the research themes *'Culture and ISD'*, *'IT Culture'* and *'IT Influence on Culture'*) is converted into explicit domain knowledge (the theory of CIISD). The hermeneutic nature of the literature review allowed an interpretation of the relevant IS development and culture landscape by paying attention to the contribution of each individual journal article. Thus, while each article in the review primarily theorizes a specific aspect of IS development and culture, the theory of *CIISD* incorporates each individual contribution in an interpretation of the whole. In effect, *CIISD* presents a higher level of abstraction of IS development and culture than is achieved in each individual article, providing a more holistic context for future research. The new explanatory theory thus serves as a novel platform for ISD and culture research (Schryen *et al.*, 2015). Furthermore, the use of inductive reasoning in this research ensures that emergent concepts are grounded in the data. Thus, the study also addresses concerns regarding the dearth of research that theorizes IS concepts, raising questions as to whether true understanding of IS is being learned and how well this understanding relates to practice (Hassan & Lowry, 2015; Grover & Lyytinen, 2015).

The components and relationships in the model of *CIISD* (what, how) were developed inductively from a hermeneutic review of a set of selected journal articles, identified through a systematic search of the literature. The hermeneutic nature of the review required only the major studies in the top level journals to be selected for analysis (Boell & Cecez-Kecmanovic, 2014); the articles selected represent the key IS publications on IS development and culture. A rigorous process of inductive thematic analysis (TA) was applied to the set of papers, resulting in an exhaustive conceptualization of the data and the emergent themes in the model. The grounded theory methodology paradigm model was used to identify the core action and order the causal conditions, consequences, and intervening conditions. The concepts and the relationships in the model (why) are justified by relating idiographic data from the articles to each component in the theory. Furthermore, the danger of producing concepts that can't be applied to real

world situations (Glaser, 2002) is mitigated by grounding these in the empirical data. Scaling up of the theory to increase the level of abstraction (Urquhart *et al.*, 2010) was achieved by grouping thirteen candidate themes into four themes, and three sub-themes. Although the theory of *CIISD* emerged in the context of IS development (limiting condition), and the key concern (*Processes of Relating*) is central to the phenomenon of IS development and culture, it could be equally relevant to other IS phenomena where culture is implicated, such as IS management, project management and offshoring.

7.1.1.2 Systems Development as Performing (*sd-as-p*)

While culture has been popular as an influential social factor in IS initiatives (Kappos & Rivard, 2008) it has been neglected as a potential source of problems for ISD. This research contributes to efforts to close the gap in knowledge in this substantive area.

In contrast to most studies in IS that position culture as a static variable, this research conceptualizes culture as dynamic and fluid. The use of an alternative cultural lens allows the emergence of diverse insight, in this study an appreciation of ISD as a form of social interaction and in particular a form of 'performance' (Goffman, 1959). This insight allowed the most unique aspect of the contribution from this research to emerge, a dual focus on the input perspective of performance (*The Doing*) and on the outcomes (*The Done*). The theory of *sd-as-p* thus shifts attention from the content of IS development to its performance, while considering the influence of leadership and culture. Additionally, most research on culture, leadership and performance position these as separate concepts. Separation of the concepts may be contributing to the alternative views on the relationships between them (Alvesson, 2011; Guthey & Jackson, 2011; Day *et al.*, 2014). By combining all three concepts in one study this research is able to capture the multiple and dynamic ways they become constitutively entangled in social interaction and contribute to efforts to build a more homogeneous knowledge base.

The components and relationships (what, how) in the conceptual model of the theory of *sd-as-p* were developed inductively from an analysis of a diverse selection of qualitative data collected from two IS development projects. The validity of this model is claimed on the basis of two key points. Firstly, a rigorous process of inductive thematic analysis (TA) was applied to the data. This process resulted in an exhaustive conceptualization of the data and the emergent themes in the model. Secondly, the variety of data sources yielding the data (interviews, observation, archival documents and photographs) allowed the emerging themes and relationships in the model to be validated through the use of triangulation methods. Justification for the themes in the model and the relationships between them (why) is achieved by relating idiographic data to each component and relationship in the theory. The level of abstraction of a theory is increased by 'scaling up' the theory (Urquhart *et al.*, 2010). In this case, scaling up was achieved by grouping the twenty six candidate themes into two themes and six sub-themes (see Figure 39). The validity of the final themes and sub-themes can be assessed based on the plausibility of the reasoning used in drawing conclusions from the idiographic data (Klein & Myers, 1999). While the theory of *sd-as-p* emerged

in the context of IS development projects (limiting condition), and the key concern (*Processes of Performing*) is central to the practice of IS development, it could be equally relevant to other IS phenomena where culture, leadership and performance are implicated, such as IS management and offshoring.

7.1.1.3 Theoretical Propositions

The research produced 11 theoretical propositions related to the practice of IS development. These offer a basis for future research into IS development. Importantly, the propositions and the concepts in the theory of *sd-as-p* to which they relate are grounded in the empirical data, mitigating the danger that these propositions can't be applied to real world situations (Glaser, 2002). Furthermore, the bulk of the propositions fall into a management dimension of IS development (see Table 20), an area that has received relatively little research attention from IS scholars; the 'ISD Performance' dimension has received 64% of research attention while the 'ISD Management' dimension has received 19% (Hassan & Mathiassen, 2018). While Hassan and Mathiassen (2018) use indications of research attention in top IS journals as testimony to the importance of IS development dimensions and knowledge areas, the lack of research attention could equally indicate a gap in current knowledge. As each dimension of IS development contributes to the shaping of IS development practice (Hassan & Mathiassen, 2018) further research addressing knowledge areas in ISD Management seem indicated. This study thus provides a basis for future research in areas where research is currently lacking. Additionally, while the ISD Management dimension could lead to an assumption that the associated knowledge areas are relevant to leaders and managers of IS development efforts, propositions from this research suggest that some of these knowledge areas are equally relevant to IS technical specialists (see propositions P3, P5, P7 and P11).

Dimension	Knowledge Area	Elaboration	Proposition	Theoretical Concept
ISD Framework	**M**ethodology	Concepts and methods. Incorporates beliefs, values and normative principles.	P1	Cultural Context
ISD Management	**P**eople Management	Focus on interpersonal conflict, closer involvement of users in the development process and managing relationships.	P2 P3 P4 P5 P8	Leading Leading Dealing with Challenges Dealing with Challenges Enacting Agency
	Performance Management	Measurement, evaluation and handling of project progress. Project escalation, de-escalation and performance measurement	P10 P11	Assessing Achievements Assessing Achievements
	Risk Management	Focus on software project risks and portfolio based management of software risks.	P6 P7	Dealing with Challenges Dealing with Challenges
ISD Performance	**O**rganizational Alignment **A**rchitecture	The fit of the artifact with organizational and social context of its use. Includes planning and design, specifically architectural issues.	P9	Enacting Agency

Table 20. Relating propositions to IS development knowledge areas (Adapted from Hassan & Mathiassen, 2018)

7.1.2 Methodological Contributions

This research used the Cultural Dynamics Model (CDM) as the theoretical foundation for data collection. The CDM has had limited support in culture studies in the IS domain. This could be attributable

to the predominance of studies of national culture in the discipline (Leidner & Kayworth, 2006) and the tendency in IS culture studies to treat culture as a static phenomenon (Gallivan & Srite, 2005). The CDM proved a successful sensitizing lens for data collection for this study. The inclusion of symbols in the model in addition to the more familiar cultural elements of assumptions, values and artifacts enriched the dataset and strengthened the interpretive theorizing. Furthermore, the use of a theory that can be classed as a middle-range theory (Hassan & Lowry, 2015) eased particularization of the model to the empirical situation. This is to be expected, as middle-range theories are abstract enough to allow for generalization, yet close enough to practice to allow for empirical validation (Hassan & Lowry, 2015). Despite the usefulness of the CDM in providing the theoretical underpinning for data collection, the model did not offer enough support as a theoretical foundation for data analysis; frame analysis was considered more appropriate for the latter stages of this research.

7.1.3 Practical Contributions

This research offers a number of practical suggestions for organizations involved in IS development projects. While the empirical situation involved an organization in the financial services industry the findings could be equally relevant for organizations in other industry sectors. The suggestions for practice are related to the theoretical propositions that emerged in this study, further illustrating the relevance of the emerging theory to practice.

To begin with, the research reveals the sources of contradictory beliefs, values and norms that can cause difficulties for the effective performance of IS development teams. When faced with these contradictions organizational members will attempt to make sense of the situation and seek alignment of their differences. Organizations can prepare for this eventuality in two ways as outlined in Table 21.

Practical Suggestion	**Related Proposition**
The organization should facilitate the emergence of IS development environments conducive to the full participation of all stakeholders. The creation of a participative IS development environment may require a reconstitution of the organizational culture as the environment should reflect a relative balance of cultural elements emanating from salient stakeholders. Thus changes may be necessary to conventional organizational behavior, organizational structures, tasks, skills, roles and power bases and to the working practices and the work identity of organizational members (Barzilai-Nahon & Barzilai, 2005; Boersma & Kingma, 2005; Barendregt, 2008; Pan *et al.*, 2008; Levina & Vaast, 2008; Gregory *et al.*, 2009; Waring & Skoumpopoulou, 2012; Koch *et al.*, 2013; Suri & Abbott, 2013). A participative environment would facilitate autonomy and contribute to collaboration among IS development team members which in turn would improve their performance.	P3
Organizations should identify and deploy organizational members with high cultural intelligence to IS development initiatives. Organizational members with cultural intelligence	P1

Practical Suggestion	Related Proposition
have the ability to bridge cultural contradictions in ways that improve the performance of IS development teams (Gregory *et al.*, 2009). These individuals have practical experience and knowledge and have an innate ability to understand the benefits inherent in different behaviors. They are able to recognize underlying causes of contradictions by openly considering situations from multiple perspectives. Importantly in the IS development context, the ability to effectively bridge the gaps between different cultures allows individuals with cultural intelligence to effectively mediate cross-cultural discussions (Avison & Banks, 2008), improve collaboration by levelling status discrepancies (Levina & Vaast, 2008) and align expectations between culturally diverse stakeholders (Rai *et al.*, 2009). Organizations can develop cultural intelligence skills through training workshops, visits to culturally diverse sites and through team building exercises (Gregory *et al.*, 2009).	

Table 21. Practical suggestions to prepare for cultural contradictions

Secondly, this research offers organizations insight into the interplay of culture and leadership in the performance of IS development and the assessment of IS development efforts. Practical approaches to respond to different situations that arise during IS development are outlined in Table 22.

Practical Suggestion	Related Proposition
Organizations should understand the influence of their organizational culture on IS development initiatives. The organizational culture appears more closely aligned with the beliefs, values and norms of leaders than with IS development team members and is consequently more influential in shaping the behavior of organizational leaders. IS development teams are more inclined to preference factors related to their experience and professional knowledge as a frame of reference for their actions. This tendency is supported by an exploratory study that found IS specialists working in organizations outside the IT sector identify with the IS profession rather than the organization that employs them (Gannon, 2013). Thus, when organizational values contradict the frame of reference of IS development teams yet are broadly and visibly supported in the organization, team members will adopt surreptitious methods in their efforts to align their actions to their preferred frames of reference. Organizational managers should therefore be aware of the potential unintended effects of some organizational values in the IS development context. This requires an understanding of the principles underlying IS professional knowledge and the preferred approach of IS developers. Organizations should insist that organizational managers involved in IS development initiatives understand and support the principles underpinning IS development activities, such as the principles behind the Agile manifesto	P2, P7

Practical Suggestion	Related Proposition
(Beedle *et al.*, 2001).	
Organizations should recognize the inherent uncertainty in IS projects (Hanisch & Wald, 2011; Ingason & Shepherd, 2014; Winter *et al.*, 2006) and reflect on potential adjustments to organizational values and conventional organizational practice to accommodate uncertainty. Failing to respond appropriately can lead to a breakdown of trust amongst IS development stakeholders causing negative consequences to team performance (Rai *et al.*, 2009; Lowry *et al.*, 2010).	P4, P5
Organizations should be prepared to tailor IS development performance assessments to suit the context. Organizational managers and IS development team members define performance differently, and both groups adjust performance definitions to accommodate complexities in the IS development context. Organizations should recognize the need for performance measures that are tailored to specific environments and to specific actor groups to best motivate and reward participants in IS development initiatives.	P10, P11
Organizations should identify the powerful actors in the IS development context. Organizational managers will use their authority to adjust the IS solution or existing practice to suit their management agendas. Similarly, technical specialists in the IS development team will use their expertise to manipulate the IS solution to suit their personal agendas. Organizations should identify these powerful actors and introduce measures to balance their influence. IS development environments that promote participation and reconstitute organizational structures can mitigate the influence of managers with power that emanates from the organizational hierarchy. Similarly, organizations can adjust routine IS development practices to introduce impartial oversight of technical specialists at critical points in the development lifecycle.	P8, P9

Table 22. Practical approaches to address the interplay of culture, leadership and performance in IS development projects

7.2 Limitations

The participants in this research are IS workers who operate outside the information technology (IT) industry; the organization in which they conduct their IS development efforts is positioned in the financial services sector. While differences between IS workers within and outside the IT industry are not obvious, the role of IS workers who work outside the IT industry is often maligned by their business colleagues (Gannon, 2013). Research indicates that IS workers outside the IT industry have a sense of operating as an outsider in the organization and these individuals identify more strongly with the IS profession rather than the organization. This context may have been a contributing factor to the frames of reference of research participants, influencing their understanding and perceptions. Future studies

comparing the practice of IS development by IS workers within and outside the IT industry could improve understanding of this contextual influence.

The use of semi-structured interviews in this research focused the participants attention on concerns in the IS development effort related to leadership, culture and performance. This focus was important in respect of meeting the research objectives. However, the significance of the ***Processes of Performing*** that emerge is shaped to some extent by the focus on culture, leadership and performance. While this focus does not diminish the relevance of these processes in the practice of IS development, it does raise the question of whether other processes may have emerged that are more compelling to the research participants. This limitation suggests that future studies exploring the practice of IS development would benefit from an approach that offers more flexibility of focus, such as is achievable in studies using the grounded theory method.

7.3 Suggestions for Future Research

Orlikowski and Gash (1994) introduced the concept of technological frames to represent the underlying assumptions, expectations and knowledge that individuals hold about technology. Technological frames are thus a subset of the organizational frames held by organizational members, and are specifically concerned with the interpretation and sensemaking individuals use to understand technology in their organizational context. The theory of *sd-as-p* differs from technological frames through positioning software development as more than just an interaction with technology. Thus while making sense of technology influences how individuals interact with the technology artifact and is reflected in *Enacting Agency*, *sd-as-p* further suggests that making sense of other phenomena, described in the concepts of *Leading* and *Dealing with Challenges* also influences the interaction of individuals and technology in a significant way during IS development. These concepts could be explored in future empirical studies in the context of an extension of the domains of technological frames.

In a study elaborating the cultural sensemaking activities of individuals engaged in IT outsourcing work, Su (2015) revealed how cultural frames acted as an underlying knowledge structure that guided cultural sensemaking. The theory of *sd-as-p* differs from the study of Su (2015) in that the focus of the latter is on the formation and reformation of cultural frames as sensemaking knowledge structures, while the focus of *sd-as-p* is on the action that results from the sensemaking process. The theory of *sd-as-p* could be strengthened by exploring the effects of evolving frames on IS development. Furthermore, as multiple cultural frames improve the effectiveness of intercultural interactions (Su, 2015) an understanding of the contribution to IS project performance from individuals with diverse knowledge and experience would improve the explanatory power of *Processes of Performing*.

In practice theories phenomena are considered to be mutually constitutive and exist in recursive relationships to each other (Feldman & Orlikowski, 2011). From this perspective social life can only be understood in relation to the agents that produce it, while agency itself is always already shaped by its

social context. This is an ongoing constitutive relationship; consequently the social condition is potentially formed, reformed and transformed in every action taken by individuals. Importantly, phenomena involved in constitutive relationships are not necessarily equal (Feldman & Orlikowski, 2011). Rather, these relationships are characterized by imbalances in power and capacity, with conflicting values and norms. The theory of *sd-as-p* could be strengthened by elaborating this principle of practice theories. While *sd-as-p* does illustrate relations that unfold in practice when offering an explanation of actions, the imbalances in relationships caused by factors like power, gender and capacity are not explored.

In an effort to provide a means to better explain the deviance in practice from established software engineering methods and the heterogeneity in outcomes, Dittrich (2016) proposes a set of concepts that allow software engineering to be described as social practice. Social practice in this context is considered to be ways of acting that are commonly acknowledged and accepted by a development team. Furthermore, software development is described as a shared social practice that unfolds its object (the IT artifact) as development proceeds (Dittrich, 2016). The theory of *sd-as-p* could be strengthened through closer attention to the emerging IT artifact as a contributor to the practice of IS development.

7.4 Concluding Remarks

This chapter concludes the thesis titled: *The entanglement of culture, leadership and performance in information systems development projects.* The research questions were revisited. A synopsis of the research approach is presented and the outcomes are briefly reiterated. In essence, this research contributes to improved understanding of the influences on IS development teams emanating from cultural and leadership sources and subsequent consequences for the performance of these teams. The research contributions underpinning the originality of the research stem from a focus on the performative nature of IS development and the influencing power of culture and leadership. The derived conceptual model and theoretical propositions constitute an emergent explanatory theory of IS development and offer a basis for further research that considers IS development from a performance or practice perspective. Further contributions to knowledge have been discussed in the sections dealing with the theoretical, methodological and practical contributions.

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9 ATTACHMENTS

9.1 Ethics Approval

UNIVERSITY OF CAPE TOWN
FACULTY OF COMMERCE
Igniting Knowledge and Opportunity

Ethics Approval Request for the Study entitled:

Cultural dynamics: the interplay of culture, leadership and performance on Information Systems projects

Signed by:

	Full name and signature	Date
Principal Researcher/Student:	Sharon Geeling	26/05/2016

This application is approved by:

Supervisor	IRWIN BROWN	26/05/16
Co- Supervisor	Pebl [illegible]	26-05-16

Approved Prof U Rivett, Chair, Ethics in Research Committee, Commerce Faculty UCT

The approval of this application is based on the researcher ensuring that all requirements regarding the permission to interview staff at the various organizations have been fulfilled prior to any surveys being conducted.

9.08.2016

Com Ethics_V4

From: ulrike.rivett=uct.ac.za@email.submittable.com on behalf of Ulrike Rivett <ulrike.rivett@uct.ac.za>
Sent: 09 August 2016 01:04 PM
To: Sharon Geeling
Subject: RE: [UCT Ethics in Research] Cultural dynamics: the interplay of culture, leadership and performance in Information Systems projects
Attachments: 5856264-Sharon_Geeling-Signatures_for_ethics_submissionsigned.pdf

Dear Researcher

We are pleased to inform you that your ethics application has been approved.

Unless otherwise specified this ethical clearance is valid for 1 year and may be renewed upon application.

Please be aware that you need to notify the Ethics Committee immediately should any aspect of your study regarding the engagement with participants as approved in this application, change. This may include aspects such as changes to the research design, questionnaires or choice of participants.

We wish you well for your research.

Prof U Rivett, Chair Ethics Committee, Commerce Faculty UCT

You can go here to view the submission:
http://universityofcapetown.submittable.com/user/submissions/5856264

9.2 Invitation to Participate in the Research

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Confidentiality and Consent Form

Dear participant,

Thank you for your willingness to participate in this study to examine the dynamic interaction of culture, leadership and performance on Information Systems development projects. This study would not be possible without your assistance. This research has been approved by the Commerce Faculty Ethics in Research Committee.

This confidentiality and consent form serves to provide a high level description of the expected benefits of this research, the research approach that will be followed, the data that will be collected, and confidentiality and ethical considerations. These topics are covered in the sections below. Importantly, signing the acceptance portion at the end of this form serves as an indication of your understanding of the research intent and approach and your willingness to participate.

Expected Benefits

This study is expected to provide a number of benefits to practitioners in Information Systems (IS). Firstly, it aims to provide rich insight on the interplay of organizational and project cultures on IS development (ISD) projects. Insight into the functioning of multi-cultural groups is particularly relevant in South Africa, where relatively high cultural heterogeneity exists within the organization. Secondly, this research aims to explain how organizational and project culture influences leadership actions on ISD projects, and how leadership actions on the ISD project influence project performance and the organizational cultural norms. Thirdly, the research will allow specific implications to be drawn regarding the influence of organizational and project cultures on project outcomes. With project management increasingly being used to deliver products and services, improved project performance and the anticipated improved delivery can contribute to stability and economic growth in South Africa.

Research Approach

Two projects of strategic importance will be selected from within your organization, one project that is maintaining or improving performance trend measurements and another that is showing deteriorating performance trends. Data will be collected from multiple sources, including archival records, documentation (including digital sources, like websites, blogs, Twitter, Facebook), interviews, questionnaires, observation and physical artefacts. Names of participants will be collected to allow data to be collated across multiple sources. This information will be kept strictly confidential and will not be published. Information of a sensitive nature, such as details of age or ethnicity will be gathered through an online questionnaire to maintain legitimacy should participants prefer not to respond. The researcher will not make any further attempt to collect sensitive data,

other than via the online questionnaire. Interviews and meetings may be audio or video recorded if acceptable, to maintain accuracy of the data collected from face-to-face interactions. Information gathered will be ratified with the individuals involved as appropriate.

Ethical Considerations

Strict confidentiality will be maintained of all the information collected. The principal researcher will be the only individual with access to the source of the information. References to participants in all published documentation will be through the use of pseudonyms, such as "Participant A". However, it should be noted that despite these efforts it may be possible in some circumstances to determine the identity of individuals and that individuals can be made vulnerable if their culture is revealed. Attention will be paid to the potential harm that could result from the research, and considerations of individual risk will guide the decisions and actions of the researcher. In cases where the risk appears, the researcher will consult with the individual before information is made public

Acceptance

Participation in this study is entirely voluntary. You are also free to withdraw from the study at any stage. Should you require any additional information concerning the study, please feel free to contact the principal researcher. All participants in this study are required to sign this *Confidentiality and Consent* form. A copy of this *Confidentiality and Consent* form is available on request.

I, Sharon Geeling, undertake to safeguard the information collected in this study, to treat this information as strictly confidential, and to refer to the organisations and participants in the study only through pseudonyms such as "Organisation A", and "Participant A" respectively.

I, _____ (print name), am fully aware of the aim, motivation, and purpose of this study and acknowledge that I am participating in this study of my own free will. I understand that I may refuse to participate or stop participating at any time without penalty. If I wish, I will be given a copy of this consent form.

PARTICIPANT: _____	PRINCIPAL RESEARCHER: _____
NAME:	
DATE:	DATE:
Email:	Email: mlnsha001@myuct.ac.za / slgeeling@slgppm.co.za
Tel:	Tel: 021 7625392
Mobile:	Mobile: 082779992

9.3 Interview Guidelines

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Interview Guidelines –Semi-Structured Interviews

Organisation Name: .....

Project Name: .....

Participants Name: .....

Date: .....

Time: .....

Duration: .....

The objective of the interview is to get a perspective from the individual on organizational culture, project culture, leadership and project performance.

Organizational information

a) If you had to describe what the organization is like, how would you describe it?
b) If you had to describe what it is like to work at the organization, what would you say?
c) How long have you been with the organization?
d) What is your role in the organization?
e) Is there support in the organization for your role?
f) If you could change one aspect of the organization, what would that be?

Project Information

a) If you had to describe what the project is like, how would you describe it?
b) If you had to describe what it is like to work in the project, what would you say?
c) How long have you been on the project?
d) What is your role on the project?
e) How do you feel about the project goal / objectives?
f) What is the most important knowledge/skill you bring to the project
g) Did you need to learn any new technology for the project?
h) How would you describe relationships on the project?
i) Have you had any previous involvement with project team members, social or professional?

Leadership

a) Who would you describe as the leader(s) on this project?
b) Could you give examples of how they demonstrate their leadership? What do they do or say?
c) Does anyone else on the project do or say similar things?
d) How do you feel about the leader(s)?

Project Performance

a) How would you describe the status of the project?
b) Do you think the project objectives are achievable?
c) What aspect(s) of the project do you feel are the main contributors to current performance?
d) If you could change one aspect of the project, what would that be?

9.4 Online Questionnaire

Cultural Dynamics

Personal Information

Thank you for your willingness to participate in this research.

Strict confidentiality will be maintained of all the information collected. The principal researcher will be the only individual with access to the source of the information. References to organizations and participants in all documentation will be through the use of pseudonyms, such as "Company A" and "Participant A" respectively.

It should be noted that it may be possible in some circumstances to determine the identity of individuals and organizations, despite the use of pseudonyms. Furthermore, it should be noted that organizations and individuals can be made vulnerable if their culture is revealed. However, careful attention will be paid to the potential harm that could result from the research, and considerations of organizational and individual risk will guide the decisions and actions of the researcher.

All questions that require an answer are indicated with *. It should take approximately 10 minutes to complete this questionnaire. If you are interrupted, it is possible to save your responses and return to the questionnaire later.

---

* Please provide the following details:

Your organizations name	
Your departments name	
Your projects name	
Your name	

Which category below includes your age?

- ○ 19 or younger
- ○ 20 - 29
- ○ 30 - 39
- ○ 40 - 49
- ○ 50 - 59
- ○ 60 and over

---

* Please indicate your language proficiency.

	Home Language	Speak	Read	Write
Afrikaans	☐	☐	☐	☐
English	☐	☐	☐	☐
Ndebele	☐	☐	☐	☐
Northern Sotho	☐	☐	☐	☐
Sotho	☐	☐	☐	☐
Swazi	☐	☐	☐	☐
Tsonga	☐	☐	☐	☐
Tswana	☐	☐	☐	☐
Venda	☐	☐	☐	☐
Xhosa	☐	☐	☐	☐
Zulu	☐	☐	☐	☐
Other	☐	☐	☐	☐

Please describe any other language(s) and your proficiency level in the language (home language, speak, read, write).

---

* What is your nationality?

Statistics South Africa defines four ethnic groups in the South African population. Which ethnic group would you describe yourself belonging to?

Asian / Indian ○ Black ○ Coloured ○ White ○ Other / Unspecified ○

* Please indicate your gender.

Female ○ Male ○ Other / Unspecified ○

* What is the highest level of education you have completed?

- ○ Graduated from high school
- ○ 1 year of college / university
- ○ 2 years of college / university
- ○ 3 years of college / university
- ○ Graduated from college / university
- ○ Post graduate

Please list current membership of any professional organizations.

Please list technology devices you regularly use in your personal and professional capacity (eg. laptop, smart phone, ipad)

Please list any project management tools and techniques you use on a regular basis.

9.5 Details of the Literature Reviews

Some of the detail regarding different phases of the literature review is described in this attachment. Full details of the second and third phases have been published previously as follows:

- Second phase of the review: Proceedings of the International Conference on Information Resources Management - 2016. Accessible as Geeling, Sharon; Brown, Irwin; and Weimann, Peter, "Information systems and culture - a systematic hermeneutic literature review" (2016). CONF-IRM 2016 Proceedings. Paper 40 http://aisel.aisnet.org/confirm2016/40.
- Third phase of the review: Proceedings of the International Conference on Information Systems (ICIS) 2017. Geeling, Sharon; Brown, Irwin; Weimann, Peter (2017) "Processes of Relating: Cultural Implications in Information Systems Development". Available at: http://aisel.aisnet.org/icis2017/Global-IS/Presentations/1/.

9.5.1 First Phase – Data Sources

The sources of data for the first phase of the literature review are illustrated in Table 23.

	Number of Items		
Category	**Journal Articles**	**Books**	**Conference Proceedings**
Anthropology	1		
Education	2		
Information Systems	43	4	2
Management	17	11	
Marketing	2		
Organization	16	16	
Project Management	17	3	1
Psychology	3		
Sociology	1		
	102	**34**	**3**

Table 23. Research domains and number of items for the literature review - first phase

9.5.2 Second Phase – Journal Selection Process

The selection of IS journals was based on the Tier 1 and Tier 2 mainstream journals ranked by Lowry *et al.* (2013). The identification of high quality IS journals through bibliometric measures in their study is closely aligned with the AIS Senior Scholars basket of journals (Lowry *et al.*, 2013). The selection of other journals was done in several stages. Firstly, an initial set of journals was selected from all regions/countries as published on the SCImago Journal & Country Rank website (Scimago Lab, 2015). From the subject areas listed by SCImago, those most likely to contain articles on IS and culture were identified, i.e. '*Business, Management and Accounting*' and the subject categories of '*Management Information Systems*' and '*Management of Technology and Innovation'.* Journals with SCImago Journal Rank (SJR) indicator rankings in the first quartile (Q1) were included in an initial set

of journals. The SJR represents a measure of the prestige or impact of journals and is developed from the information contained in the Scopus® database. It is calculated as the average weighted citations the articles published in the journal have received in the three years prior to the year of interest (Scimago Lab, 2015). As citation measures can be problematic when used to assess journal quality across research disciplines (Lowry *et al.*, 2013), this set of journals was refined through a number of further steps. In each step the journals identified by Lowry *et al.* (2013) were used as a bench mark of journal quality, on the basis that these journals have featured in previous IS journal ranking studies, which typically rate both IS journals and those non-IS journals that publish IS research (Lowry *et al.*, 2013). The steps in the journal selection process, depicted in Figure 42, were as follows:

1 Remove journals not on the list of IS and non-IS journals identified by Lowry *et al.* (2013) as rated in all previous IS journal rankings

2 Add journals, including IS journals, if they are included in the list of journals reviewed by Leidner and Kayworth (2006) and also appear on the list of IS and non-IS journals identified by Lowry et al. (2013) as rated in all previous IS journal rankings

3 Add journals, including IS journals, if they contain articles citing Leidner and Kayworth (2006) as identified by Web of Science, and are included in the list of journals reviewed by Leidner and Kayworth (2006), or appear on the list of IS and non-IS journals identified by Lowry et al. (2013) as rated in all previous IS journal rankings.

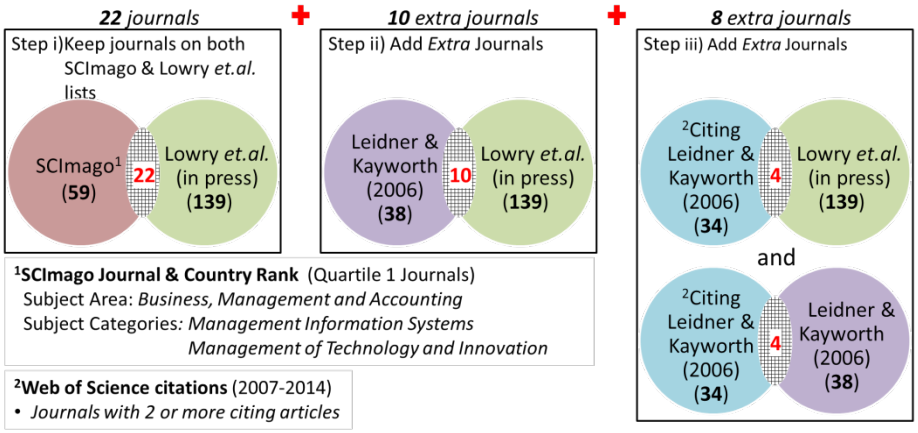

Figure 42. Journal selection decision process

9.5.3 Second Phase - List of Selected Journals

	Journal Name	Abbr.	Total Articles
Tier1 & Tier2 IS Journals	*European Journal of Information Systems*	*EJIS*	7
	Information Systems Journal	*ISJ*	8
	Information Systems Research	*ISR*	3
	Journal of Information Technology	*JIT*	5
	Journal of Management Information Systems	*JMIS*	10
	Journal of Strategic Information Systems	*JSIS*	10
	Journal of the Association for Information Systems	*JAIS*	5
	MIS Quarterly	*MISQ*	9
Business, Management, Accounting and IS Journals	*Academy of Management Journal*	*AMJ*	1
	Academy of Management Review	*AMR*	1
	ACM Transactions on Management Information Systems	*ACM TMIS*	1
	Behaviour Information Technology	*BIT*	3
	Communications of the ACM	*CACM*	2
	Computers in Human Behavior	*CHB*	13
	Decision Sciences	*DS*	1
	Decision Support Systems	*DSS*	2
	Electronic Commerce Research and Applications	*ECRA*	1
	IEEE Transactions on Engineering Management	*IEEE TEM*	2
	IEEE Transactions on Professional Communication	*IEEE TPC*	8
	Information and Management	*I&M*	10
	Information and Organization[1]	*I&O*	2
	Information and Software Technology	*I&ST*	1
	Information Resources Management Journal (IRMJ)	*IRMJ*	3
	Information Society	*ISO*	6
	Information Systems Management	*ISM*	2
	Information Technology for Development	*ITD*	5
	Information, Technology, and People	*IT&P*	9
	Interfaces		0
	International Journal of Information Management	*IJIM*	12
	Journal of Computer Information Systems	*JCIS*	8
	Journal of Global Information Management	*JGIM*	29
	Journal of Global Information Technology Management	*JGITM*	6
	Journal of Information Systems	*JIS*	1
	Journal of Operations Management	*JOM*	3
	Journal of Systems and Software		0
	Knowledge-Based Systems	*KBS*	1
	Management Science		0
	MIT Sloan Management Review		0
	Organization Science	*OS*	6
	The DATABASE for Advances in Information Systems	*DATABASE*	5
			201

Table 24. List of journals with number of articles selected.

9.5.4 Third Phase – Empirical Studies in the Data Set

IS Theme - Culture and ISD	
Citation	**Relevant Findings**
Avison, D., & Banks, P. 2008.	The authors demonstrate the existence of asymmetries of participation within the offshoring communication process between Indian and UK/US members of IS development teams. This asymmetry increases through a lack of shared understanding and perceived hierarchical differences.
Boersma, K., & Kingma, S. 2005.	The function and meaning of the Enterprise Resource Planning system changed significantly during system adaptation and implementation which in turn led to a new kind of organizational structure. The interplay between the organization and the information technology led to each defining the other.
Clemmensen, T. 2012.	During usability testing of IS designs local evaluators provide specific and rich descriptions and instances of usability problems in contrast with foreign evaluators where descriptions are vague and instances aren't detailed. The definition of usability may be culturally biased and foreign evaluators will be unlikely to identify local usability problems.
Cyr, D., & Head, M. 2013.	Gender has a moderating effect on website design preferences in higher masculinity countries, whereas no moderating effects occurred in lower masculinity countries.
Dysart-Gale, D., Pitula, K., & Radhakrishnan, T. 2011.	Cultural differences in communication practices between local and outside stakeholders during the design of a prototype information-management system appeared to condition differing acceptance of the new technology.
Gregory, R., Prifling, M., & Beck, R. 2009.	The development of cultural intelligence in IT offshore outsourcing projects leads to the formation of a negotiated culture, characterized by trust-based interpersonal relationships, shared understanding, and effective resolution of conflict.
Iivari, J., & Huisman, M. 2007.	The authors develop a theoretical model of the relationships between organizational culture and the perceived support, impact and use of Systems Development Methodologies.
Leonardi, P. M. 2011.	In the software development process, technology concepts may be used to select the cultural resources used by organizational units to frame problems. This framing influences the type of technological artifacts that are eventually built.
Levina, N., & Vaast, E. 2008.	Differences in country contexts gave rise to boundaries that inhibited collaboration effectiveness in offshore application development projects. Differences in organizational contexts were largely mediated through organizational practices. Position and resources allowed some onshore managers to alleviate diverse status differences across country contexts, facilitating effective collaboration.
Martinsons, M. G., Davison, R. M., & Martinsons, V. 2009.	Organizational change and IS implementation are more likely to succeed if they are a good fit with the organizational context.
Pscheidt, M. 2011.	Cultural differences between participants in software development (SD) from the Netherlands and Mozambique influenced the SD process and affected dimensions of success measures.
Rai, A., Maruping, L. M., & Venkatesh, V. 2009.	In offshore IS projects, shared norms concerning work orientation, the communication climate and internal controls contribute to the success of these projects.
Sia, C. L., Lim, K. H., Leung, K., Lee, M. K., Huang, W. W., & Benbasat, I. 2009.	Practical web strategies of peer endorsements and reputable organizational affiliations were shown to have differing effects on Australian and Hong Kong online shoppers, in building trust in unknown websites.
IS Theme - IT Culture	
Citation	**Relevant Findings**
Koch, H., Leidner, D. E., & Gonzalez,	Conflict between IT and culture can be reduced in digitally enabled social network implementations by reducing the cultural difference between those

E. S. 2013.	championing the technology and its intended users, by allowing modifications to the system to support user values, and by introducing mechanisms for changing culture.

IS Theme - IT Influence on Culture	
Citation	**Relevant Findings**
Barendregt, B. 2008.	The study highlights the symbolic value of the mobile phone as a symbol of modernity in Indonesian society. At the same time the mobile phone facilitates circulation of the notion of what constitutes a modern and hip language for social interaction.
Barzilai-Nahon, K., & Barzilai, G. 2005.	The introduction of technology (internet) into an ultra-Orthodox Jewish community affected preserved and empowered the traditional structures of the community. The shaping of IT usage has assisted survival of the community through the use of the internet for religious needs.
Boersma, K., & Kingma, S. 2005.	The function and meaning of the information technology (ERP) changed significantly within the particular organizational context, which in turn led to a new kind of organizational structure. The interplay between the organization and the information technology led to each defining the other.
Goggin, G. 2008.	The role of the mobile phone in the shaping of Australian Asian identity is revealed through considerations of intercultural communication, proximity, coexistence, survival & cultural bridging.
Kaplan, S. 2011.	Information technology (PowerPoint) mediates the discursive practices involved in strategy making. By treating the information technology as a representation of organizational culture rather than a cultural artifact the study reveals how knowledge is produced and validated in the organization.
Lowry, P. B., Zhang, D., Zhou, L., & Fu, X. 2010.	The study found that culture matters greatly in fostering trust in decision making groups, and that interpersonal trust is influenced by collaboration software that promotes social presence.
Pan, S. L., Pan, G., & Devadoss, P. R. 2008.	Factors underlying the successful cultural adaptation of the Singapore National Library Board to the introduction of new technology included a strong and visionary leader, a strategy for cultural adaptation, a systematic change management process, good communication, a sense of ownership, stress management programs and a culture of innovation.
Pscheidt, M. 2011.	Cultural differences between participants in software development from the Netherlands and Mozambique influenced the software development process and affected dimensions of success measures.
Suri, G. S., & Abbott, P. Y. 2013.	An IT cultural enclave developed its own cultural norms by accommodating contradictory cultural positions, by allowing new modes of behavior within current practices, adopting new modes of behavior, and making sense of behavior from the viewpoint of another.
Waring, T., & Skoumpopoulou, D. 2012.	This study of an integrated information system implementation undertaken within a large UK university highlights the complexity of emergent cultural change and the need to conceptualize culture in a manner that captures its complex and dynamic nature.
Zhang, D., Lowry, P. B., Zhou, L., & Fu, X. 2007.	The results show that the use of computer-mediated communication can reduce majority influence in Chinese and US decision making groups.

Table 25. Empirical studies in the literature review data set - third phase

9.6 Kindle – Initial Summary of Themes and Number of Sources

Themes	Sub-themes / Candidate themes			Sources
Cultural Contradictions	Process Contradictions			12
	Technology Contradictions			8
	Value Contradictions			16
	Vision Contradictions			11
Processes of Performing	Assessing achievements			11
	Defining success			10
	Working at Being Best	Dealing with Challenges	Dealing with Bad News	15
			Dealing with Uncertainty	13
		Enacting Agency	Culture Changing Technology	5
			Technology Changing Culture	16
		Leading	Balancing Achievement and People	15
			Empowering Individuals	7
			Facilitating Collaboration	12
			Positioning to Achieve Objectives	11
			Shaping the Behavior of Followers	6

Table 26. Themes and number of sources after initial analysis of Kindle

9.7 Kindle – Final Summary of Themes and Number of Sources

Themes	Sub-themes / Candidate themes			Sources
Cultural Context	Cultural Contradictions	Process Contradictions		12
		Technology Contradictions		8
		Value Contradictions		16
		Vision Contradictions		11
Processes of Performing	The Doing	Dealing with Challenges	Dealing with Bad News	15
			Dealing with Uncertainty	13
		Enacting Agency	Culture Changing Technology	5
			Technology Changing Culture	16
		Leading	Balancing Achievement and People	15
			Empowering Individuals	7
			Facilitating Collaboration	12
			Positioning to Achieve Objectives	11
			Shaping the Behavior of Followers	6
	The Done	Assessing achievements	Defining success	10
			Performance Assessments	11

Table 27. Themes and number of sources for Kindle after cross-case analysis

9.8 Blend – Initial Summary of Themes and Number of Sources

Theme	Sub-themes / Candidate themes			Sources
Cultural Contradictions	Process Contradictions			5
	Role Contradictions			5
	Technology Contradictions			3
	Value Contradictions			10
	Vision Contradictions			3
Processes of Performing	Assessing Achievements			6
	Defining Success			5
	Working at Being Best	Enacting Agency	Technology Changes Culture	8
		Dealing with Challenges	Dealing with Bad News	2
			Dealing with Uncertainty	10
		Leading	Balancing Achievement and People	8
			Empowering Individuals	7
			Facilitating Collaboration	12
			Positioning to Achieve Objectives	8
			Shaping the Behavior of Followers	6

Table 28. Themes and number of sources after initial analysis of Blend

9.9 Blend – Final Summary of Themes and Number of Sources

Theme	Sub-themes / Candidate themes			Sources
Cultural Context	Cultural Contradictions	Process Contradictions		5
		Role Contradictions		5
		Technology Contradictions		3
		Value Contradictions		10
		Vision Contradictions		3
Processes of Performing	The Doing	Dealing with Challenges	Dealing with Bad News	2
			Dealing with Uncertainty	10
		Enacting Agency	Technology Changing Culture	8
		Leading	Balancing Achievement and People	8
			Empowering Individuals	7
			Facilitating Collaboration	12
			Positioning to Achieve Objectives	5
			Shaping the Behavior of Followers	6
	The Done	Assessing Achievements	Defining Success	5
			Performance Assessments	6

Table 29. Themes and number of sources for Blend after cross-case analysis

9.10 Kindle – Relationship Coding and Associated Data

Relationship	Name	Coded Text
Cultural Context challenges Working at Being Best	SC7SP1	And with the information you may be able to analytically work out how the new world function, taking into account your objections in the area of detail. But if you don't voice those, you find later you've developed something off the base of some false assumptions unwittingly, and you then have to go back and rework and unpick and deal with this issue that could have been voiced earlier.
Cultural Context challenges Working at Being Best	SC1SP1	It's almost as if we only talk about what's happening now, but if we look ahead and we see like the challenges I've spoken, I've mentioned, I don't think there's enough of that. It's almost as if that is part of the bad news story that we don't want to talk about.
Cultural Context challenges Working at Being Best	SC1SP1	So if some of the execs get the real messages, and then you get it at the Steerco, some are a bit further away, you know you've got to find the balance between sharing what the others know, disclosing the detail, and sharing enough of the stuff that's not so great because these other guys are not that close. So I think it's finding that balance, but you know you tend to walk a fine line. That is so. people very quickly build a perception about projects and about a PM, whether he is on top of stuff, or whether he always just talks about what's not happening and what's not good on the project. You know, it's also kind of building your own brand.
Cultural Context challenges Working at Being Best	SC1SP1	And I think that's where our culture impacts our projects. So we have a very optimistic view on our estimates, because you know we can do everything and anything, and it's not going to take that long. Almost always we find that we have under estimated complexity, and we are underestimating the effort.
Cultural Context challenges Working at Being Best	SC1SP1	It's his job to say look this is the true state of affairs. This is what we haven't done, this is how long it's going to take, this is how much it's going to cost. Because we are raising the risk from a portfolio perspective, because the information is not coming through. And that's a portfolio risk saying look, we aren't going to get into a gridlock. Everybody is now waiting. How do we resolve this.
Cultural Context challenges Working at Being Best	SC1SP1	the other thing is you know, people driving agendas, or you know when you start doubting whether, you know, is this the real truth and nothing but the truth. Or are we having different conversations depending on who's in the room.
Cultural Context challenges Working at Being Best	SC2SP1	So, um, SC9SP1 is a very, very nice guy. Too nice. And I mean it well. You'll treat it correctly. SC10SP1, sitting there on the side, she's also a very nice person. But I think at times you know, they, I wouldn't, I don't think it's wrong if they are a little bit more assertive. Put facts on the table to say guys live with it, this is the way it is, or option 1, 2 and 3, which one is it, which one do you want to take.
Cultural Context challenges Working at Being Best	SC4SP1	I would think in terms of leadership broadly, we underestimate the intelligence of our staff. From the point of view is that we we, um, we don't necessarily communicate with staff about the critical issues. So, if we talk about employment equity as an example, or um, then we paint a specific picture in terms of what is good for the company and those things might be valid, but we don't necessarily paint the picture of its not only because we want to do those, it's also because we have to do that. And why we have to do that, frankly there's no choice about it. The only paint the picture in terms of why we want to do that. And those, quite often those things are not authentic. So if we talking then about stuff like a new project, we quite often should also give a view of what the challenges are. Where are we not performing well enough in terms of those projects. Where should we get the buy-in from staff that we have to put more shoulder on the wheel kind of thing. I'm not sure where I.... it's almost as if we we try and motivate staff in a not authentic enough way.
Cultural Context challenges Working at Being Best	SC4SP1	So where was that lack of understanding. I don't necessarily think that we only realized, came to realize those issues later. They would have been there, and maybe its technical issues, and maybe it's about understanding those things better before you articulate them cos you maybe create a lot of noise and uncertainty, and maybe that is the reasons why people don't, are not forthcoming with those issues sooner. So rather see if you can fix it than create unnecessary noise.
Cultural Context challenges Working at	SC6SP1	and we said now, they have a strategy, they want to grow business, they want to start growing the direct channel, everybody, all the exec support them, but back at home, you are like, what the hell are you thinking.

Relationship	Name	Coded Text
Being Best		
Cultural Context challenges Working at Being Best	SC6SP1	. And then also if you think about the fast pace that our external environment are changing, you need to be able to easily adapt to that. And sometimes we want to go back to the old ways of doing things, and that's exactly the reason what cause us to fail.
Cultural Context challenges Working at Being Best	SC6SP1	But, it's because the product owner said, this is how we are doing it now, this is how you will do it in the future. We would have saved a lot of effort and time and money if we just convinced them take the time out to show them that, prove to them that this is the way we should implement. And sometimes we lack on that.
Cultural Context challenges Working at Being Best	SC6SP1	it's more a close knit, and people are protective of each other. So, the family is protective of each other. So it's difficult for an outsider to come in and just think that you are just going to change, and shape the trend around here. Because we like, it's the protection of the family.
Cultural Context creates Cultural Contradictions	SC9SP1	Picked a very good package. Worked against [the Organization] - vendor sales exploded, thinks they sent their least valuable resources to RSA. Didn't get top end advise, and very strong business people in the beginning phases that had a very set way in how things should work in the new world, which had a carryover from their legacy experience.
Cultural Context creates Cultural Contradictions	SC9SP1	There are things they insisted on adding to the package that are now being ripped out. It had all the functionality they required in the vanilla version
Cultural Context creates Cultural Contradictions	SC9SP1	very strong business people in the beginning phases that had a very set way in how things should work in the new world, which had a carryover from their legacy experience. They now have a huge piece of work to rip apart and put together the PL product, is a direct result of that
Cultural Context creates Cultural Contradictions	SC2SP1	And then maybe you know in typical [the Organization] fashion, because we sometimes, you know we over complicate things, so you know maybe we didn't have to go for this fancy system.
Cultural Context creates Cultural Contradictions	SC5SP1	Because with the Agile methodology, they told all of us, and we told everybody else, we shared the same message. Agile methodology means that you don't do everything up front, but that you do it as you go. You do a little bit, you test, you do a little bit, you test, and then it there's changes to be done, you do the changes... But that not, thats what we said to everybody, but in practice we have a waterfall culture. So we are stuck in our waterfall state of mind at an executive level.
Cultural Context creates Cultural Contradictions	SC5SP1	So people have been brought up, a certain way with certain belief systems, right, and it's been inculcated for so long and, that to get rid of that shackle, if it's not a conscious effort, you cannot subconsciously get rid of the shackles, of that thinking, that apartheid are bringing. Unless you are conscious about it and you make a conscious effort to break out of it.
Cultural Context provide norms for Assessing achievements	SC2SP1	I struggle and I admit that with the concept of overtime. Because I've never worked like that.
Cultural Context provide norms for Assessing achievements	SC2SP1	And then as I say the one point, I said it to you earlier, the one thing we don't do is to celebrate performance enough, and there is definitely a gap. And why I say that, the cultural survey, engagement survey we do it comes out, staff are saying we are hard on ourselves. We don't celebrate.
Cultural Context provide norms for Assessing achievements	SC2SP1	You see now the sad thing is, we now pay them overtime to achieve their targets, and then we give them a bonus because they achieved the targets. Does that make sense to you. I can't understand that. Its stunning.
Cultural Context provide norms for Assessing achievements	SC4SP1	So, don't always just paint this rosy picture. Paint the bleaker picture as well, and ask for input in terms of how we should address that. And not be scared to admit that we don't have the answers, or that the decisions that we've made were not the correct decisions.

Relationship	Name	Coded Text
Cultural Context provide norms for Assessing achievements	SC5SP1	people are complaining that in Broker distribution, at the time it was called Broker distribution, you don't get a chance to, you know they, people of color don't get any opportunities, opportunities are all reserved for white people, so SC2SP1 turned around and he says you know, um, he said I don't like to set people up for failure, that's why I didn't give SC5SP1 the position of head portfolio management. Now at the time [head of department] used to be head of portfolio management
Cultural Context provide norms for Assessing achievements	SC5SP1	So, to me you see, that's where I struggle. Because, I come from a culture where we were so good at what we did, we knew, we were much closer to accuracy. We got it right much more than what the people in [the Organization] get it right. You know what I mean.
Cultural Context provide norms for Assessing achievements	TL5SP1	So for me, from my perspective, I feel I have to work extra hard, because it doesn't matter from where I fit, because on the one side I'm always in the middle, on the one side you get the whites, and on the one side you get the blacks, and I'm in the middle, so I feel it doesn't matter what I do, I have to work 4 times as hard to prove myself. and although I know I'm good, I still have to do it, it doesn't matter.I feel I have to do this, but sometimes I feel it doesn't matter what I do, it's not being recognised as such. this is my personal view. Because I'm sitting there, and I'm always sitting there. You will see people coming and going, and you know what you think to yourself jus I've worked so hard and I'm just not getting the position. and I'm seeing somebody else getting it - you understand
Cultural Context provide norms for Working at Being Best	SC9SP1	SC8SP1 had the experience of a similar journey at [the opposition]. that maturity and perspective of how difficult a thing this is, definitely created a different dynamic at the business leadership level.
Cultural Context provide norms for Working at Being Best	SC9SP1	The scrum masters are workers, but they have good leadership qualities. That is key. It's about relationships. So SC9SP1 spends a lot of his time trying to make sure the relationships keep on going.
Cultural Context provide norms for Working at Being Best	SC7SP1	so with lots of people with long service, there is still a number of pockets of that. So, people who don't have the, don't experience the freedom to speak out, yet they are in the place where they are the most qualified to speak out. And they don't always necessarily get the fact that the decision makers at a higher level in the organization don't have access to the level of detailed information and perspective of reality in that place that they've got. So, they've got the best information around the.. they may not always have the best critical and analytical powers, but they need to deliver the information. So they need to feed the information that they have to say what about this. Or if you apply that, how does that, you know, what does that mean for this, this and this.
Cultural Context provide norms for Working at Being Best	SC7SP1	it's about making sure that all the info is put into a central pot, and that that then drives your optimal solution. And we are improving there, but there are still some sort of, pockets of culture that remember that very strict authoritarian environment where you don't speak if you are not a senior manager.
Cultural Context provide norms for Working at Being Best	SC7SP1	So, the fact that [the Organization] has been positioned internally and externally as the leader in [the industry], and at that a successful leader, gives people a sense that well we need to live up to that. We need to live up to what we projected internally and externally and we are proud of our brand. We are proud of our services etc.
Cultural Context provide norms for Working at Being Best	SC7SP1	There's a strong focus on excellence, on performance, on at the same time is recognizing the value of people, that we are there for people, we exist for people, in terms of the business internally and externally.
Cultural Context provide norms for Working at Being Best	SC8SP1	But I think had I been here in the start, because this is my 3rd experience of decommissioning a mainframe, I think I could have added quite a bit of value to that discussion. Because I see almost like common mistakes that I've seen in the past in the other 2 that I've been involved in
Cultural Context provide norms for Working at	SC8SP1	it spends a lot of money on developing managers. A lot of good money. I mean, I think the courses and the amount of people that we send every year, on various leadership, management style courses, is phenomenal. I've never experienced that in my corporate career. Admittedly I haven't

Relationship	Name	Coded Text
Being Best		worked at many places, but definitely in my [previous employer] days, we didn't spend a fraction of that amount of money. Maybe because we were owned by a family. You know where the dividends went... So I find it a very nurturing organization. I do find it's a bit of a family,
Cultural Context provide norms for Working at Being Best	SC8SP1	Ja, I think there is a underlying, almost DNA in the organization that it's quite structured, and don't try break the structures. Don't try beat the (?), there's structures you go through and you follow those structures. And that's how it works, you know. Don't argue about it, just do it that way, and you will be fine. And as long as you follow the process, you're fine. But try and dance the other way, you are going to run into all sorts of walls.
Cultural Context provide norms for Working at Being Best	SC8SP1	(what is behind the hesitation in delivering bad news?) I think it's maybe a little bit of just the DNA of the hierarchical place, hey.
Cultural Context provide norms for Working at Being Best	SC8SP1	And I think when I meet people that have worked here for 20 odd years, that have been in [the Organization] most of their life, my experience of the corporate world, I've learned so much since I've left [previous employer]. Because you got stuck into that way of doing things, and that was the only way you could do things. Because that's all you know, because you sort of come from the bottom up in it.
Cultural Context provide norms for Working at Being Best	SC8SP1	I mean, this was a really, really, unbelievably staid culture, know your place, ja meneer, nee meneer, you know you didn't argue with the boss. You followed instructions of the boss. There might be a bit of that still in the organization. And there are strong disciplines in the organization. I mean that type of culture brings discipline, you know, nobody left work early, they were too shit scared ... So it brought about discipline. But I think there was a little bit, you know, you don't want to tell all the bad news because you don't want to get shat out. Versus solving the problems. So OK, now we can do something about it, so let's tell everybody,
Cultural Context provide norms for Working at Being Best	SC8SP1	You know, um, ja, so I find that it's quite nurturing and caring of its people. And even where I have had to do a little bit of management clean outs, if I could call it that, it's never, ever tried to screw people. So, that's why I say, it's quite generous.
Cultural Context provide norms for Working at Being Best	SC10SP1	I get to engage with the Exco members, so it's not as if it's this kind of 4th floor no one accesses, so you work with leadership, and they are very much involved in the projects as well. So it feels like, it's a bit of a family,
Cultural Context provide norms for Working at Being Best	SC2SP1	The people are very scared to actually admit they've made mistakes. And also coming back to [the programme]. I think, I don't think it would be actually wrong to say, jus, we got this wrong. Sorry guys, kill us if you want to, we got this wrong. Instead of you know, trying to play around it, wiggle, wiggle, wiggle, and then you realize, look, it was wrong.
Cultural Context provide norms for Working at Being Best	SC2SP1	You might have heard, I'm sure, that we don't celebrate success often, because you know as soon as we are successful, we actually say but you know we could have done better. We can do more, let's keep going, keep going. And I think that is the secret of our success, the fact that we are so self-critical, if that's the right word.
Cultural Context provide norms for Working at Being Best	SC4SP1	whether we talk about internally in [the Organization], or with external business partners, the key has always been the relationships. So, you can have the best systems, you can have maybe the best people with technical ability, whatever the case may be but you would not get things done as successfully as you do if you don't have those relationships. I mean, our key success factor in terms of our growth is not the fact that we have the best products or the best pricing, or even the best infrastructure in terms of how we deal with claims, but it's the brand and the historical relationships that we have
Cultural Context provide norms for Working at Being Best	SC5SP1	But then, you know, what I wasn't used to, was that relationship takes precedence over everything else, you know. That is the [the Organization] culture. Profitability plays second fiddle to relationship. Um, everything play second fiddle to relationship. That is the cultural difference I had never encountered. I mean, in the global giants, it's all about performance of the company. Relationship is secondary to that. You build good relationship, yes, you must have good relationships. I mean thats a normal way of anything is like, whether it's your marriage, whether it's your friendships, relationship must work. But, the outcome, the profitability the sustainability of the organization, was the critical strategic thing. Whereas in [the Organization] it was the other way round, it was all about relationship.

Relationship	Name	Coded Text
Cultural Context provide norms for Working at Being Best	SC6SP1	So, if I look at its almost like, this unit was there for the last 20 years, nobody dare change that unit. And people don't do the unpopular things.
Cultural Context provide norms for Working at Being Best	SC6SP1	That is the ideal future. But can't we maybe just find a mid-way. And I think we flaw about, we always want to go for the best, because there's also external influences
Cultural Contradictions challenge Working at Being Best	SC9SP1	Another dynamic is that they have a new SC12SP1 halfway through the process. The SC12SP1 has their own agenda, make their mark, new visions etc. Now the focus is on business growth and profitability This is introducing the cost pressures on the programme. SC9SP1 feels the cost pressures are premature. Might end up costing more, because the cost cutting measures cause the programme to run longer.
Cultural Contradictions challenge Working at Being Best	SC9SP1	Good that some balance started coming in. They did some soft skills training with some people, some alignment amongst the BAs regarding documentation, alignment around how the testers do their test cases
Cultural Contradictions challenge Working at Being Best	SC9SP1	there are a lot of supporting processes that they started putting in place some time ago, If you have a good Agile process, but not a very strong release management process, then there would be a problem.
Cultural Contradictions challenge Working at Being Best	SC7SP1	And I think perhaps the wakeup call that we had in that early phase was almost what paved the way for the successes later on, because you know we had got such a shock that this thing really was so big, and then I think things worked really well from then
Cultural Contradictions challenge Working at Being Best	SC8SP1	let's just develop small things and develop them fairly quickly. Ok, you happy with that, right we can move on to the next thing, then move on to the next thing etc. And get something on the table and get it working. Get it working as soon as possible, that you are starting to use it. And not search for perfection before you start using it. there's always a thin grey line, there's no doubt there's a thin grey line, and there's I wouldn't always say that everybody is on the same page with that.
Cultural Contradictions challenge Working at Being Best	SC8SP1	Um, I think, if you want something big and complex to be done, like essentially decommissioning mainframe, because you are moving the stuff off of the mainframe, take a pile of people out, go lock them up in a room, and tell them to come out when they've done the job. Don't let them be interfered by with all the other rats and mice and crap that happens in a corporate game.
Cultural Contradictions challenge Working at Being Best	SC2SP1	(why didn't you get like for like. Is it functionality gaps in the technology, or a misunderstanding of the business process change necessary to accommodate the new technology) I think it's a combination. I don't think, it's just my view, but I don't think it's one thing. Maybe the system, the technology, coming from America, we work differently. I'm sure that the technology can do it, but it would have cost us much more. As they went along they realized it's going to cost more, and they also cut some of the things out of scope.
Cultural Contradictions challenge Working at Being Best	SC2SP1	But you know if you don't have project management skills and you don't have people who live, eat and sleep these things, no how to track everything, change management specifically, then you will make mistakes.
Cultural Contradictions challenge Working at Being Best	SC4SP1	if I relate to the [the solution] system, it's about critically looking at the way that we do things today, how should we do it differently. So, if we have the new [the solution] technology, when do we actually go and see how others do it, because we run the risk if I'm in my role, been in the place for 20 years, I'll adapt the system to my way of working, rather than seeing how we can adapt better to the system. And that you can only see if you really engage with and try and learn from others.

Relationship	Name	Coded Text
Cultural Contradictions challenge Working at Being Best	SC4SP1	So what I currently battle with is while we've implemented technology that would allow for flexibility, that we still need to define to what extent we want, what that flexibility would mean. Is it flexibility in terms of what the client needs are, and does the existing products not already cater for that. And where are those scenarios where it doesn't cater for it. And also flexibility in terms of the broker. What does it mean for the broker to be more flexible. Does it mean that every broker should have their own product, and be treated differently, and also in terms of the distribution channels within [the Organization], if you are talking about personal lines clients through our direct channel versus those through the broker channel. Are they significantly different, should they be treated differently and also, ja. So, it's just clarifying that level of flexibility, and how much complexity that will create, and to manage that.
Cultural Contradictions challenge Working at Being Best	SC4SP1	we also found it challenging to formulate our business requirements, because of the fact that you've got this legacy system that's been there for 20 years. There's a lack of understanding from business people in terms of what the system actually does. What is it that mainframe currently does that we see as, that we take for granted. So if you then have to put your requirements forward for a new system you really battle to understand what your requirements should be and how to articulate that.
Cultural Contradictions challenge Working at Being Best	SC6SP1	The old world versus the world has moved on since. And I think that's sometimes difficult to break the barriers and just cut that line and say it doesn't work, we can't continue what we did.
Cultural Contradictions change Cultural Context	SC2SP1	So, and I must also say initially we didn't have the SC13SP1 buy-in. SC13SP1 didn't want to spend this money. He didn't like the numbers, and because he didn't like the numbers fair to say, they came up with numbers he liked. That backfired.
Cultural Contradictions change Cultural Context	SC4SP1	So, having said all of that, even with those significant changes over last 20 years, I'm quite amazed at how, especially Afrikaans white people, were able to adapt without any real concerns or challenges to change with the changing culture at [the Organization].
Cultural Contradictions change Cultural Context	SC6SP1	so what I find difficult in my role coming in, now to say OK guys you can't continue. there's nothing wrong with the way that you continue, but looking forward, you can't continue in the way that you've been doing it all along. So now you need to actually start changing that behavior, but the [the Organization] culture is as soon as you shift, shake the tree, they don't like it.
Cultural Contradictions contextualize Assessing achievements	SC8SP1	We are humans man, we always want something more. That's what we are like. So I think you've got to have the business people close, but you've got to work in, I like this concept of, of , short measurable things.
Cultural Contradictions contextualize Assessing achievements	SC2SP1	So it's also relative I suppose to the person you are asking. SC13SP1 will say it wasn't successful, potentially, because it was over budget. My view the fact that we could afford it, the fact that we can actually switch off at some stage the old system, the fact that we are growing our business, our rating is more mature, servicing didn't fall over, staff seem happy, all those things plays a role in terms of you being able to say it was successful.
Cultural Contradictions contextualize Assessing achievements	SC4SP1	It's about making things, changing things quicker, um, responding to market a little bit easier, I don't see that. Maybe, and the understanding would be that you require less resources. Yet we, I know that we are still in a development phase, but I can't see that benefit.
Cultural Contradictions contextualize Assessing achievements	SC6SP1	So the ROI is definitely there. But then back at the ranch, everything is not always, because we brought in an American system and I've seen it in [*Holding Company*] as well, you buy this external overseas system, and then when we start working we find, but we've got VAT, they say what's VAT, it's a tax we need to pay. So then, they don't have it. It's not part of it
Cultural Contradictions contextualize Assessing achievements	TL5SP1	I sometimes feel that higher up the Exco, the guys doesn't understand and they will say let's migrate. Now it's just a matter of oh why did you only migrate 3000, and not 10 000. but it's because of the data. the way it was done on mainframe, and we cannot get it across onto [the solution]. You need some fancy footwork. and sometimes you can't just say put it there, and then we'll fix it. You can't, because now we have a specific product model, and it's not tables and its maintained in different places
Defining success	SC9SP1	One of the great successes is they do about 26 releases a year. It requires the integration of a number of teams for each release.

Relationship	Name	Coded Text
contextualizes Assessing achievements		And the implementations are stable.
Defining success contextualizes Assessing achievements	SC7SP1	And it was almost considered to be a certainty that there would be massive fallout from that rollout, because of all the parties involved. And the great success was that we didn't have that. We improved our underwriting margins, we improved our net promoter score, and we improved our business volumes. So, on all the measures we did better during the rollout. And so as much as I believe we failed in the early fits and starts around defining the product and getting the whole thing, and understanding the tool, when we mastered that, I think that paved the way to performance.
Defining success contextualizes Assessing achievements	SC7SP1	And so on. So I think, if I think of complexity, I think of all the things that could have gone wrong, I think it has been a great success. So anyway, but it's an ongoing thing.
Defining success contextualizes Assessing achievements	SC8SP1	The year that you are migrating systems, training 1500 people in contact centers, shogh, there's not many that can claim this and have been as good as this. So, it's not a hell of a lot I would want to change, you know,
Defining success contextualizes Assessing achievements	SC10SP1	Yet here at [the Organization], so we have been a little bit over budget, some will tell you that we told [the CEO]it was going to be that budget he just didn't like the number that we told him... But last year, you know 2016, when we rolled out the bulk of the personal lines, we grew by 20 odd thousand policies.
Defining success contextualizes Assessing achievements	SC1SP1	Another perspective of success is have we been able to contain the costs, from a total cost of ownership perspective, and from running this new platform, and there you unfortunately should say again, no. Because we are now running dual systems. We are running longer on the mainframe, we now running the new platform, so costs has increased, out total cost of ownership has gone up. From that perspective we haven't achieved it.
Defining success contextualizes Assessing achievements	SC1SP1	I think depending on your definition of success you can have one view, that will say it was hugely successful. You know, organizations often fail when they move platforms from the mainframe to whatever else is new. Our [existing solution], you know, this was like open heart surgery for an insurer. You know, this is our core system. And we've been able to move off the platform. We running 260 thousand plus policies on the new platform successfully, with month ends and all of that. So, from that perspective its hugely successful.
Defining success contextualizes Assessing achievements	SC1SP1	My gut feel would be that at the moment, they would see it as successful. Because that's the message SC12SP1 carries. SC12SP1's happy. So when they get to the org and risk committees, she just states clearly that she is happy with where we are at. Now from a costing perspective you would have imagined this thing to have a 10 - 15 % cost overrun, because it's so big, and thats normal, so, happiness all round. So I think the journey to date, the business is not broken, we've migrated, the brokers have not, not a single broker left us because of the journey, you know, so there are some fabulous success stories, and that's what the board will see at the moment. And we've even been able to report some IT benefits up to the end of last year. The challenge starts now. I look forward into the next 3 years, that's the challenge. Now, we are running double costs, now we are expecting agility, now we saying we need to redo stuff. So it's been, I think, very successful to date, but the real challenge starts now, looking into the future.
Defining success contextualizes Assessing achievements	SC1SP1	So if I've got another exec saying that's all good, but I, from a business case perspective, you promised me that I am going to have all this agility and flexibility. I can quickly adapt to market conditions, and I can change things, and that is just not happening. You know, because you still busy with re-doing all sorts of things, we haven't moved into the world where I can experience flexibility and agility. So from that perspective, it hasn't been successful.
Defining success contextualizes Assessing achievements	SC1SP1	So if you look at it from a benefit perspective, I'm saying agility and flexibility is not there, total cost of ownership reduction is not there, so no. But, we have not in any way negatively impacted [the Organization] in replacing systems. And that is a big achievement. It could have killed the company. Some companies are brought down to their knees because of this. So, it really depends on which filter you look through. There's not one definition of success. You know we had the change management and training team winning one of the annual awards. Because they have done an amazing job in taking the organization along, retraining thousands of brokers and staff, and driving adoption. So, there's many successes, that we

Relationship	Name	Coded Text
		can tag onto [the programme], but unfortunately there are also things that we have not achieved. And we are a long way off from achieving that.
Defining success contextualizes Assessing achievements	SC10SP1	But I think the performance management is very, ja, output, value adding delivery we seem less focused on that. It's more about cost containment, than looking at what the numbers are saying. Especially this year, where we are . It's not so much how good you are managing your people, it's did you stay in your budget. And SC10SP1 is quite hard and fast on that one.
Defining success contextualizes Assessing achievements	SC10SP1	I think knowing when we started, and how it evolved, and what's been delivered with the benefit to the business, and the non-impact on the business performance, we could have, this could have been bad. It hasn't been.
Defining success contextualizes Assessing achievements	SC10SP1	we've been able to introduce the measures that is not specific time, cost... So it's more the complexity.. And I think it is valued, that you know, the team is still happy, are they motivated, those factors.. But at the end you do look at did we deliver on time and in budget, and that becomes then the performance criteria. But there is definitely a bit of more openness to consider the context in which the project delivers. But it has been hard work to get people to think about it.
Defining success contextualizes Assessing achievements	SC4SP1	I believe we've been very successful in terms of the business adoption of the system. Maybe, the cost of implementation was not that successful, but that's a different matter.
Defining success contextualizes Assessing achievements	SC4SP1	So, for me, I think SC8SP1 would also, the level of success in terms of business adoption of [the Organization] versus what happened in [the opposition] is chalk and cheese.
Defining success contextualizes Assessing achievements	SC4SP1	From our side we've said we will improve the underwriting margin. I think we, for us we have done that. We've introduced a better rating structure, we've introduced tighter controls in terms of underwriting leakage. So much so that we've actually had to adopt, because we've created too many referrals etc., so in many cases we've actually ticked those boxes. So for in terms of the business objectives, I think we, I've been fairly successful in terms of realizing those benefits.
Defining success contextualizes Assessing achievements	SC4SP1	in other scenarios what we need to do if there is non-performance, on projects or whatever, we need to address that as well. I mean, so if you look at the bonuses, maybe not related to projects itself, if you look at the bonus structure in [the Organization], only a very small percentage of [the Organization] staff don't get paid bonus. So, almost without exception, everyone does what they are required to do or better, and that surely cannot be the case. So, I think, in some cases, we, us as leaders, also have to take a little bit more of a tougher stance, and tougher stance in terms of having to address some of the non-performance, but also in terms of raising the issues with staff and getting their input
Defining success contextualizes Assessing achievements	SC4SP1	last year you would celebrate the success of [the programme], and next year March you say well we've got to do a whole, redo a whole piece of work which was not done properly. It's about that inconsistency in the message. But that people say, but hang on, why is that. Last year we thought that we did, we doing great and x,y and z and we celebrate the end of this sprint and that sprint, and we've delivered on that and everyone is happy but uh, now we've got to go and do a whole rework of things. But, ultimately having said that, I think [the programme] was very successful, especially when it comes to business adoption.
Defining success contextualizes Assessing achievements	TL5SP1	For me the project is very challenged. very, very challenged, because, of the data. It's all about the data. We try not to fall behind, because we have scheduled dates, when we do want to migrate. and what we plan putting in.
Defining success contextualizes Assessing achievements	TL5SP1	They will say its excellent, you've migrated so many policies, about 100, could be less. They say we can see so many coverages, we can see so much stuff. then obviously you get the new people who will say, oh but this is not working for me, or it's about what, it's about perception.
Working at Being Best	SC9SP1	SC9SP1 did it, through his philosophy which is if people understand what we are all trying to achieve, and what everyone's role is in achieving that,

Relationship	Name	Coded Text
challenges Cultural Context		and if I help my neighbor then we all reach the target, that's what gives us the kick. That's what SC9SP1 tries to inculcate, and the leadership team kind of buys into that.
Working at Being Best challenges Cultural Context	SC9SP1	There's also the legacy from [the Organization] org of the IT and Business Change split SC9SP1 doesn't feel this is the best thing. The people shaping the business demand and business requirements sit in one structure, the guys who build it sit in a different structure. Knows there are pros and cons, but on [the programme], this is totally collapsed.
Working at Being Best challenges Cultural Context	SC9SP1	They need to fit in with some org requirements (financial reporting, PPO) , but for the rest have figured out a way of working, and because it is theirs they make it work.
Working at Being Best challenges Cultural Context	SC9SP1	Try to give the scrum masters as much autonomy as possible
Working at Being Best challenges Cultural Context	SC7SP1	And what, the biggest risk in the project was change management, and what we managed to achieve is a buy-in from these different business areas that traditionally don't support IT projects. They kind of want to get on with their own business and leave the IT stuff to the people in the background.
Working at Being Best challenges Cultural Context	SC7SP1	And with that constant engagement the relationship between business and the IT area has strengthened in the sense that because we have got this culture of wanting to move forward, that we are not going to fool one another in terms of whether something is done or not or whatever. We'll engage one another early enough so that we can get the signoff and get the opportunity to move forward. So, I think that has worked well.
Working at Being Best challenges Cultural Context	SC7SP1	So, there isn't a hesitation to at this stage call issues for what they are. So while we will all play the issue rather than the person, or you will seek to do that, there is a very clear sense that we don't want to be wasting our time. We are professionals, if there is a problem we need to as quickly as possible identify it, roll our sleeves up and deal with it. So thats been an important dimension of the culture.
Working at Being Best challenges Cultural Context	SC7SP1	So, we were not ruthless and contrary to our culture of respecting people, but we wasted no time in removing people that we did not feel had it in them. Whether it be from a competence or an attitude perspective, and both are as important. So if the person didn't exhibit the right behaviors, the right attitude the right skills, then we would rather have them move off, either outside the company or elsewhere in the organization, where they could be effective.
Working at Being Best challenges Cultural Context	SC7SP1	the other thing you know where the Agile methodology has helped us quite a lot in the [the programme] environment, is that there are certain expectations of leaders that are built into the methodology. And so you force that level of accountability for what you've achieved in the period of time, you force the level of honesty to say well this went right, this went wrong, this is what we are doing to mitigate it, you know, so every week in your, and in all your scrum sessions, you quick, to the point, frank and honest, about where you are, what your blockers are, what's gone well.. And that is a nice way of just getting to the issues as quickly as you can. And filtering up and solving problems.
Working at Being Best challenges Cultural Context	SC8SP1	No, I'm not sure that the program always puts everything out there. I mean maybe from a leadership perspective, you know, sometimes SC9SP1 has been a bit cruised by some of the people that you always paint such a rosy picture of where we are, you know. Him and I often have the discussion about sort of the Agile methodology of getting something into production, versus seeking perfection
Working at Being Best challenges Cultural Context	SC2SP1	And there I think, the one thing I would have liked in hindsight, is almost more open and transparency to actually say at some stage you are not going to get like for like. Get over it, these will be the gaps, we can't do these things, instead of, I sometimes get the impression, it's just an impression, the project team sat there and decided, guys we have to sort of make this thing work. So, come hell or high water, irrespective of what the business people say. Almost to force it through. Which again I suppose at some stage in a project you have to get something through otherwise you end up nowhere.
Working at Being Best	SC2SP1	It's one of these projects that you can't run the project on its own, and then come and give us something to implement. It was an integrated

Relationship	Name	Coded Text
challenges Cultural Context		approach, which I think worked.
Working at Being Best challenges Cultural Context	SC4SP1	I think, yes there should surely be the opportunity for us to celebrate the good stuff, and then also address the things that we are not doing that well. And maybe, why we are not always wanting to address those concerns, it is about, maybe it's also about, a culture that we are trying to create where people should be allowed to make mistakes. And so if you do make the mistake, then we don't really want to be too harsh on that. So, but ultimately for me, it's not about necessarily the mistakes, but I think be more honest. Give a view of what the real real, um, reality is. If we are doing well on [the programme] or a specific project, then we should definitely communicate those to our staff. But if we are behind on it, on a specific project, not wait until it's really deteriorated to an extent where it is difficult to do that.
Working at Being Best challenges Cultural Context	SC6SP1	Where it failed horribly in the past, especially on the commercial side, and by doing that we actually put the end user demand together with the system. As opposed to just taking the technical expertise, where they think this is the way it should work. And that we did really well this time round. So we involved a lot of the users, where we didn't do that in personal lines.
Working at Being Best creates Cultural Contradictions	SC9SP1	The model driven architectural paradigm is still the dream in the other building - [product name], up to date etc. Gives a big productivity boost, because that overhead is removed
Working at Being Best creates Cultural Contradictions	SC9SP1	They have teams, a very flat structure, a very status less environment No one has an office, no one has a special seat, SC9SP1 likes to sit where he can observe most, rather than in the corner office he is entitled by his job grade. if they need privacy for some discussions, they use little meeting rooms. SC9SP1 doesn't feel the trappings are important.
Working at Being Best creates Cultural Contradictions	SC9SP1	They haven't been dictated too around the documentation they need to produce, or the process they should follow. In terms of their processes, they can see the level of productivity through number of changes going out each week and the system is stable, and the business is happy with what they are delivering that means no one has any need to come in and try and change their processes
Working at Being Best creates Cultural Contradictions	SC7SP1	there in certain parts of the organization, is an occasional reluctance to be honest about failings. So, because you want to have your best foot forward, and everybody think, have everybody think that you are a great performer, because you believe that will drive your performance remuneration, etc. etc., you might hide any chinks in the armor, whereas what we really need to get to is a proper, mature organization where people expose issues so that you can roll up your sleeves, deal with them, that they have the confidence that you not going to kind of come down like a ton of bricks on them.
Working at Being Best creates Cultural Contradictions	SC7SP1	But I think we can draw a lesson from that as you say, and use a paired down version to force in the whole methodology of project management a proper driving of adoption and so on. And then, potentially tweaking. Because, you might have delivered something, that actually falls flat. So what do you do. You know, do you salvage the thing, with the business. Do you tweak it in some way, do you experiment with a few different things using what you've done till you get it right, and then in the end get the value. Or, or what.
Working at Being Best creates Cultural Contradictions	SC7SP1	[the programme] is obviously a structured program with complexity and governance structures are put in place. Now we try to make those governance structures fit for purpose, and have been willing to amend them as we needed to in terms of what we were looking for. And there has been an element of proactivity around that. I won't say it's perfect, but we've tried to avoid wasting time and so forth.
Working at Being Best creates Cultural Contradictions	SC8SP1	So if they have expensive coffee, and these guys here have cheap coffee, so what. Deliver the thing, the risks are very high. You know, you are playing with a lot of money,
Working at Being Best	SC1SP1	doing more than just saying our people are our biggest assets. Because that statement gets made a thousand times every year. We have the best

Relationship	Name	Coded Text
creates Cultural Contradictions		people in the industry, but do we really care about our people.
Working at Being Best creates Cultural Contradictions	SC10SP1	Right, so, and people are so used to sitting in their technical team that now to move.. there is areas that we've done it, and it is working well. But it's not like [the programme], tomorrow we move again, the next day, a week later, teams change so you need to take a new desk. So people are much more flexible and fit for the change. So, ja , for me there's that differences, and it still exists. It creates that us and them feeling.
Working at Being Best creates Cultural Contradictions	SC10SP1	So if you never worked on [the programme], and you sit here, there's a natural kind of negativity. Cos if they can continue, they continue to spend the money, we can't do anything, our work is not prioritized because we still busy with [the programme].
Working at Being Best creates Cultural Contradictions	SC2SP1	I don't always think they tell us everything they know. They don't lie, I'm not saying that, but they know things, and if we don't ask in the Steerco, they won't say. They won't offer the information. I think they want to showcase that they are doing a good job, and they are successful, you know and don't worry about us.
Working at Being Best creates Cultural Contradictions	SC6SP1	You can't say or everybody become a developer and a tester stroke BA, Because, outside in the real world, they don't have a role like that. And it's not to say that you can't contract that for short periods, but I think thats where we lack as an organization, in terms of supporting. So we have strict policies, you've got a job description, there's job evaluation, but that to me seems more like the, that's the bible, but we don't read the bible, when we actually.... So there's an ideal world and there's the reality.

Table 30. Relationships between themes, sources and related data extracts from Kindle

9.11 Blend – Relationship Coding and Associated Data

Relationship	Name	Coded Text
Cultural Context challenges Working at Being Best	Comment - Delivery Planning Forum Meetings	What is really puzzling, is that they are told to continue, and to try and secure funds from the business budget. In some cases this is a real problem, for instance where a project manager has a contract with a supplier to the end of the year. It appears the PO will assist the PM to try and resolve this in some fashion. CT8SP2 was the only really vocal dissenter. He wanted to know why the PO don't work on a budget, and not on the demand. The PO say because the PM's keep telling them they can't put budgets together for so far ahead. Nevertheless, there's a chance that some of the projects started this year won't be able to complete, essentially wasting the funding they've used. I can't believe this is the most effective way to allocate org funds. Surely it would be better to limit the projects up front. Also, why don't they actually stop those projects that will run out of money? Instead they let them get as far as they can, but potentially the funds could be wasted???
Cultural Context challenges Working at Being Best	CT1SP2	we are going to do what needs to be done, and first we are going to do what needs to be done according to the rule book, and then if some impossible thing comes up, we may have a quiet meeting without the rule book, and make it happen.
Cultural Context challenges Working at Being Best	CT1SP2	what I do experience sometimes is that as there are many cogs to the wheel, sometimes they don't know who the person is who drives that particular cog. They know it's there, but sometimes it's difficult to, it takes a while to get to the right person to deal with a particular problem.
Cultural Context challenges Working at Being Best	CT3SP2	you know the security which actually delayed the project, you know it was this very strict hierarchical you know if it doesn't fit you can't use it. So that to me is something that's always, and is probably because of the strong IT skill set, you know, and the very specific way that I think adds a lot of cost to projects.
Cultural Context challenges Working at Being Best	CT4SP2	Oh look, I think we do take too long to make decisions. I think, and it's not, it's part of our culture, as I say our culture is a consensus based decision making process, versus a person make be given a particular role and it's their area of expertise, let them make the decision.
Cultural Context challenges Working at Being Best	CT4SP2	there is a collective decision making at a senior level, which means that nobody is right or wrong, it's about sharing different ideas, and then based on the different ideas, having a consensus view. Sometimes from a culture point of view it means that [the Organization] takes too long to make decisions, because sometimes you actually just needed top-down and get the answer.
Cultural Context challenges Working at Being Best	CT5SP2	I also think what the cause of it, or the reason for that is legacy. It's the history of this organization. Look, but a 100 year history, and it's always been dominated by middle aged, men, white men, who always made the decisions. And I think that legacy still lives through this organization. I think it is slowly starting to change, I think we are adapting to what is happening outside [the Organization], the broader world out there, and I think where you start to see exco members are starting to empower people lower down in the ranks. To say, you guys need to make a decision, and you know, you live with those decisions, and you know what (mistakes, we all make them) Absolutely. So I think it's a legacy issue, it's people not being delegated, and also the message not coming down to say it's fine you can make mistakes, but we don't want those mistakes, and we move on. You know, but as long as it's not repetitive. So I think those are the issues, that is something I would want to change. that they empower people more to make decisions on their own, instead of keeping it within a certain group of people.
Cultural Context challenges Working at Being Best	CT5SP2	all organizations that I've worked in there's always been performance contracts, but I've never seen the real value. Yes, it guides people in terms of what we need to deliver, but I also think it limit's people in terms of what they need to, so unfortunately people tend to limit themselves today, my performance contract says this, and that's all that I will... I will not stretch myself
Cultural Context challenges Working at Being Best	CT5SP2	from where I've come from where decision making is much more quicker, much more decisive, whereas here we are, we tend to be very careful, we want to consult a bit more with other people, before we actually make it. So people are not willing to put their head on a block, so to speak. To say, you know what, I've making the decision and I hold myself accountable for making the decision.

Relationship	Name	Coded Text
Cultural Context challenges Working at Being Best	CT5SP2	Right. You need to empower and to delegate. But the tendency in this organization is for very senior people to be getting their hands dirty. It shouldn't be the case. I think leaders at the top most level or even at your senior level, they should be the ones that's thinking very strategically. they should be directing. But they are actually getting their hands dirty.
Cultural Context challenges Working at Being Best	CT5SP2	so when you ask people to make decisions, (??) I need to consult with my manager first, and the manager needs to consult with exco first. So that's why I think decision making all gets made up here, at the top levels. You understand. Instead of saying well as a manager you need to be able to be empowered to make decisions.
Cultural Context challenges Working at Being Best	CT5SP2	there's a lot of those people that also sit in senior positions as well who only know [the Organization] and the [the Organization] way. And that's how we do it, mos. So I think those are the areas that you will find a bit challenging when it comes to the organizational type of discussions, the mentality that they have, and um, slow to change, resistant to change, those type of challenges.
Cultural Context challenges Working at Being Best	CT5SP2	very senior leaders get involved in very operational stuff. Now that tells me it's the whole issue about not willing to delegate, right, but it's also an issue around I need to have control.
Cultural Context challenges Working at Being Best	CT6SP2	Um, I do think we have some critical roles missing, especially in our division. Like I said, system architects, not enough SAs and architects. Um, which eventually really causes delays and at the end of the (?) it's just extra costs.
Cultural Context challenges Working at Being Best	CT6SP2 (2)	but are you really listening to what I'm telling you, I'm raising the risk, the project risk, and you are not doing anything. You are not, you know they are sort of not proactive, they are mainly reactive, reactive, and then they throw the hammer, like big time. Once it happens, then everybody has to just up in arms and just fix it. Not the right way. Listen to what your people are saying, tell you, so, ja
Cultural Context challenges Working at Being Best	CT6SP2 (2)	I think, you are too scared to raise something or to argue something, especially if you are a person that's not, you know, you not that strong a person, um, because you just get 'Oh no, I don't want to hear that. This is what we do, this is the way we go da, da, da, da..." So you almost feel that your inputs or opinions are not really valued.
Cultural Context challenges Working at Being Best	CT6SP2 (2)	it's like my way is the way, no other way. But there is I've found a lot of the time I'm raising stuff to you, I'm telling you this, what are you doing about it. And then, you know and then the shit hit's the fan, and then it comes back to me..
Cultural Context challenges Working at Being Best	CT6SP2 (2)	Ok, CT7SP2s point yesterday was we were not told that there is an issue. so rightfully, that is a valid point. (Why weren't they told). Um, I don't know. Because I did tell both CT8SP2 and CT9SP2 a couple of times, we missing info, the data is not, I'm worried about the data integrity, I'm worried about the data integrity for quite a while, until, and nothing was done until business came and said we can't carry on with this, we want the proper data to test, so don't waste our time. so, ja,
Cultural Context challenges Working at Being Best	CT6SP2 (2)	what happens in reality is ug, it's because you don't apply my methodology. And everybody tells that person, in reality it doesn't work that way. He just said, no, this is the way to do it, so he is really a black and white person
Cultural Context challenges Working at Being Best	CT7SP2	that's still my experience. Internally we are very, at times it can even border on management by consensus, you know what I mean, which can sometimes not be a good thing.
Cultural Context challenges Working at Being Best	Deal with the issue not the individual	This seems to be a popular mantra in [the Organization] at the moment. I first heard it from CT8SP2, and then when chatting to [senior manager] (who reports to CT8SP2), she actually brought it up and said she always tries to deal with the issue and not the individual. This is interesting, because in my past experiences with [senior manager], I would not have described her style in this way, but quite the opposite.
Cultural Context challenges Working at Being Best	Symbolism - War	Today, I noticed the use of the metaphor of 'War' by different individuals, on both the projects. It's used in the sense of "go to war" and also describing contingency funds on the project as the "war chest". Does this mean they see projects as a battleground. this seems at odds with the popular descriptions of a supportive, professional environment.
Cultural Context creates	CT3SP2	I think it was very specific at that stage, you know, [the Organization]ised, if I can call it, where we are now looking for a very generic

Relationship	Name	Coded Text
Cultural Contradictions		product, so you know I can actually roll it out to [business unit], [business unit], I can roll it out to [business unit], it must be you know of such a nature that everyone can just plug in and become part of the family.
Cultural Context creates Cultural Contradictions	CT6SP2	here on this project we don't have change management, there's a huge change management issue coming out now, so it's just... I don't understand why certain projects everything runs super cool, other projects it's just like come, come, just get going, get going...
Cultural Context creates Cultural Contradictions	CT6SP2	I think, mainly because not, it's always time, time, time, time critical, don't take enough time to properly plan, half of the time we are going over our deadlines, because I feel that they didn't properly follow right processes to estimate. time, resources, cost.
Cultural Context creates Cultural Contradictions	CT6SP2	it's all on paper there, and everybody is supposed to follow that, so also just remember I'm a bit of a black and white person, so I expect things will be done per the book, and that's not always happening. There's sometimes a lot of grey areas
Cultural Context creates Cultural Contradictions	CT6SP2 (2)	And ownership, to me the project manager should take ownership. And juggle the balls and see what's going on and where's people not bringing their contribution, and who is you know, and sort it out. But it's like, I don't know, ja.
Cultural Context creates Cultural Contradictions	CT6SP2 (2)	I would definitely take more time up front to do proper planning and estimates, definitely, because one of the things is, pressured for time, and then we rush things often we don't do a good enough job.
Cultural Context provides norms for Assessing Achievements	CT4SP2	if you measure or benchmark it against the organization and I can talk from experience, it probably tracks 5 to 10% below the average every year from a general score. it doesn't mean, it's because we are just more analytical, conservative from an ethics and integrity point of view. You know, we call a spade a spade and that's the way we operate.
Cultural Context provides norms for Assessing Achievements	CT4SP2	one of our ethos in procurement and probably interesting thing is that we very objective in terms of our measurement, and we also very understating of our potential. You know, we not people like marketing or whatever that put up big sports, we just don't do it, we don't brag enough.
Cultural Context provides norms for Assessing Achievements	CT5SP2	(performance assessed in terms of volume) Yes. (what about quality). No it's not. I don't see it currently. We don't measure (yes it's difficult to measure) Exactly. But I think we are too target driven versus performance. So that for me there's a distinct difference between the 2. The target is numbers. So if you achieve these numbers within this budget, stuff like that.
Cultural Context provides norms for Assessing Achievements	CT5SP2	but I still feel that a lot of those things are still at managers discretion, the relationship that managers have with certain individuals. Some people are viewed higher than what other people are, purely because they have a better relationship than what they have with managers.
Cultural Context provides norms for Assessing Achievements	CT8SP2	if you just think about it for CT7SP2 the key thing is not whether his Manco guys will be happy, but whether the people on the floor will be happy. So, I think in May it's going to be an acid test for us, to see are the people... Because, they actually are the people who are going to make it or break it, so the adoption thing is going to be a challenge.
Cultural Context provides norms for Defining Success	CT5SP2	So I think, I'm very reluctant to say that we are not a performance driven organization, I think we are, but I think we could possibly do more. But I think there's not a awareness around so what does it mean for you as an individual, and what does it mean for us as an organization. We are a performance driven organization. I think we are currently a target driven organization. Maybe that's a better way of putting it. We are working towards targets.
Cultural Context provides norms for Defining Success	CT7SP2	what's actually important I believe in this business, and what has made it successful, is its ability to manage relationships, at many levels.
Cultural Context provides norms for Defining Success	CT8SP2	for CT7SP2 the key thing is not whether his Manco guys will be happy, but whether the people on the floor will be happy.
Cultural Context provides norms for Defining Success	CT9SP2	I think that he very early on realized that not only is the product for himself, or for his teams, he needs to ensure that everybody is aligned to, you know, the direction that the system and the enablement of the system is going to give to him.
Cultural Context provides	CT3SP2	That's what [the Organization] allows you do with, and that kind of freedom, and I think the support is there from management to

Relationship	Name	Coded Text
norms for Working at Being Best		say but yes, OK we don't have to cross all the T's and dot the I's before we start something, just get it done and we'll make sure, but don't neglect the right thing.
Cultural Context provides norms for Working at Being Best	CT5SP2	there's never that feeling or sentiment around, you know what. If somebody puts out an idea that is not a good idea, it's discussed and we agree, you know what, this is maybe not a good idea. then we move on from there. But I don't think people are ever made to feel stupid
Cultural Context provides norms for Working at Being Best	CT8SP2	And then what you will see from the team, the team is also protective of him. Showing up any pitfalls in terms of the investment committees, or risks that is going to bite him in the $#@!.
Cultural Context provides norms for Working at Being Best	CT8SP2	So, as I said to you earlier, [the Organization] gives me the freedom to get to outcomes, and they don't bog me down with the how to get to outcomes. There's a lot of trust in [the Organization].
Cultural Context provides norms for Working at Being Best	CT9SP2	Previously it was just on an ad hoc basis now it's become fundamental capability that's entrenched. You know, so not only are the business executives that enable the requests for a project to be initiated, but they've actually got to put their signature on the fact that they can track and report on benefit's, if it's efficiencies, if it's extra what's a name policies written, premium increases, they can actually validate back to that exercise that they spent that that's the return they are getting on that spend.
Cultural Contradictions challenge Working at Being Best	CT1SP2	I'm from a small business, so there's always a big culture difference for me to come to a large organization and meetings where you have many more meetings that we would have,
Cultural Contradictions challenge Working at Being Best	CT1SP2	So I would say that's probably our biggest, and it probably comes up with every IT project, but our biggest stumbling block was our sort of preparation training, I would have done that a little bit differently. Because I would have made it more relevant to what they are actually doing in their first day of work, and not focus about all of the things that need to be tested.
Cultural Contradictions challenge Working at Being Best	CT5SP2	Because, it could be potentially disastrous, where just allow you know, differences of opinion and views, to continue and continue, and become destructive. To say, well instead of being destructive, let's see how we can be constructive, you understand, to the benefit of the project. I think we have probably had a couple of disagreements, but I think they've allowed the discussions to go in such a way where we reach consensus.
Cultural Contradictions challenge Working at Being Best	CT5SP2	so OK, now who fit's in where. So I think we were caught up a bit in that. As things settled down within the organization, so the project also settled down. So who's our business change manager, who's our project manager, who do we speak to, you know, is it CT9SP2, is it CT8SP2,
Cultural Contradictions challenge Working at Being Best	CT6SP2	I don't understand why certain projects everything runs super cool, other projects it's just like come, come, just get going, get going...
Cultural Contradictions challenge Working at Being Best	CT6SP2	So remember, we are buying a finished product. And there wasn't, I think even for me, I know business struggled with it, I even struggled with it, to fully get the context of everything and then to realize, OK guys, now you need to, these are the main components, I need this info, I need this info. And you do it in a more organized, structured way
Cultural Contradictions challenge Working at Being Best	CT6SP2 (2)	so I'm not a formal tester, I've just been told to go test, train, BA, PA everything on this project, SA as well.
Cultural Contradictions challenge Working at Being	CT6SP2 (2)	They've got a testing team lead on board that manages the reporting, um, and we just, we didn't follow, we didn't use that system, to log the stuff in, raised the Jiras, we didn't, for this project we didn't went through the formal processes, I don't know why.

Relationship	Name	Coded Text
Best		
Cultural Contradictions challenge Working at Being Best	CT7SP2	Also it was something that was not, it wasn't main stream. We struggled hey. You don't get support out of the.. because the businesses are not aligned to it. They don't, your audit guy, I mean everybody, it feels like the whole world is working not with you, to put this thing in. You need to bat the whole time just to justify what you are doing.
Cultural Contradictions challenge Working at Being Best	CT8SP2	[Executive] doesn't care about a R10million project
Cultural Contradictions challenge Working at Being Best	CT8SP2	the key pitching point is to say is you must decide, do you want to leave a liability for your successor, or do you want to enable your successor and give a springboard. So, I'm trying to get them, I'm trying to force them to move off this 3 year timeframe, into a longer term picture. So that would be my key, there's just too much emphasis on the short term objectives.
Defining Success contextualizes Assessing Achievements	Commentary - Notes on interaction with CT6SP2	It's interesting that she also positions how much the team has achieved in terms of a measure of performance. This is similar to the reaction of SP1, where some team members spoke about their achievements in terms of the work that had been completed as an assessment of performance. I.e., look at the numbers we've got through, that is impressive. But this isn't assessed in terms of meeting the commitment they made.
Defining Success contextualizes Assessing Achievements	Commentary - View of performance	It's quite astonishing the extent to which the perspectives on performance downplay any significant concern for the triple constraint. Overwhelmingly, the focus is on business benefit. This makes sense from a business perspective, but to some extent this view is vulnerable to the difficulties encountered in constituting business cases. How can they be sure the business benefit is related to this particular project? What about external factors, like market conditions, the health of competitors etc. Also, there are financial implications for senior leaders tied to the performance of the project. They can't be considered unbiased in their justifications of success indicators.
Defining Success contextualizes Assessing Achievements	CT1SP2	Ja, so for me as the software vendor, if I don't have happy end users, it actually means nothing. So, although software is built on a business case and all sorts of things, there's loads of red tape, in the end my next product sale is going to come from happy end users, not all that other stuff, is kind of irrelevant in the mix. And even the project deadline and schedule, you know that's all forgotten, what is remembered in the end, is does the system work or not, does it do what we need it to do. And if you ask me what makes a successful IT project and what doesn't, I would say to you that it's everybody in the project team must be aiming at that business objective, and not just running the treadmill and going through the steps.
Defining Success contextualizes Assessing Achievements	CT4SP2	and I suppose using myself as an example, I've never got 5 out of 5, because we actually don't believe in 5 out of 5, so I mean if you are a 3 you are doing your job 100% and some of us maybe get a 3.5 you know depending on the year. Some years I've probably hit a 3.5, but generally between 3 and 3.5 because you actually can't get a 5 in our department. It goes as far as to say that our departments performance contracting if you measure or benchmark it against the organization and I can talk from experience, it probably tracks 5 to 10% below the average every year from a general score.
Defining Success contextualizes Assessing Achievements	CT4SP2	I've literally always got the performance rating of 3, and I think that's maybe one of your topics as well. And really one of our ethos in procurement and probably interesting thing is that we very objective in terms of our measurement, and we also very understating of our potential. You know, we not people like marketing or whatever that put up big sports, we just don't do it, we don't brag enough.
Defining Success contextualizes Assessing Achievements	CT7SP2	At this stage I'm comfortable, at this stage I'm comfortable. As I say I think currently we are not in a you know we need to deliver yet, that humming machine thing, so I mean come and ask me again in October or November, then I'll tell you.
Defining Success	CT7SP2	We actually have the luxury of time in terms of this. So, the approach was to be, let's make it inclusive, let's get buy-in from the

Relationship	Name	Coded Text
contextualizes Assessing Achievements		people, and then... So I think the whole thing about performance for me is how I would measure it, is not only, or obviously there must be monetary benefit's case, which we have, but the performance in terms of outcomes for me would also be how do we actually enable our people. So it's how do we enable people, how do we get the financial outcomes that we actually need and then measure ourselves against that. So, I'm quite a structured person, so for me, there's a project plan, we agree what we are going to do, when we stick to that then I am saying we are performing. But, having said that, that's the mechanics of it. So, there's the other nuances again. How do we take our people along, how do we empower them, how do we actually build a platform for what we want to do going forward. I think that for me is another part of performance.
Defining Success contextualizes Assessing Achievements	CT9SP2	I think that where we are at and how we've been able to engage with the business, how we've been able to position our requests for funding, the project is very much in a positive light. Out of a rating of 10 or 5 for that matter, I'll rate it currently at with all the considerations I'm talking about stakeholder management, communication, financial management, all of those, so we are very much in the 7 to 8 bracket.
Working at Being Best challenges Cultural Context	2017.03.23_14.56_01	So in our war chest we've got money in Q4 to start the design of the next phase. we can do anything which you want to do. But I don't want to put it in the public domain because it's our war chest,
Working at Being Best challenges Cultural Context	Commentary - Notes on interaction with CT6SP2	She was very stressed at this session. The testing is going badly, everything seems to have been rushed, and she is being blamed. She kept holding her side, as though she was in pain. She wanted to carry on an fit the session in, because she felt the timing was always going to be difficult. I felt quite bad taking her time.
Working at Being Best challenges Cultural Context	CT1SP2	I'm actually pretty sure this project not me, cut out certain elements of the process from what I saw.
Working at Being Best challenges Cultural Context	CT1SP2	So that was a risk that they took, but it saved them significantly on project budget and timelines and all sorts of things.
Working at Being Best challenges Cultural Context	CT1SP2	But CT7SP2 is reasonable, so as long as you satisfy his requirements, he doesn't tell you how to do it. He just says these are the requirements that need to be met. And then do it the right way, whatever that may be.
Working at Being Best challenges Cultural Context	CT4SP2	but the leadership position on this is that we are going to stick to vanilla as far as possible. Now that's a leadership statement in my opinion, because the fact is if you don't do that, you can now start bastardising the system which is actually going to cost a lot of money, etc. etc.
Working at Being Best challenges Cultural Context	CT5SP2	I also don't micro manage my people. I think has always been a big issue in this organization, that managers micro manage their staff.
Working at Being Best challenges Cultural Context	CT5SP2	So I'm more focused about the, at the end, the delivery. the output. more than what the person is actually doing, sitting there potentially not doing anything. So that is a very different approach to how people used to manage (? their staff). Not just in the past, but also currently.
Working at Being Best challenges Cultural Context	CT5SP2	the reason I laugh about the policies is the policies will have a, you'll have a one page policy, two page or 10 page policy, but at the end of all of those policies, they've got this nice wording, and it says, At managers discretion. So follow the policy, but the manager can decide how to apply the
Working at Being Best challenges Cultural Context	CT7SP2	So, that I see as an important leadership role for us, to actually create the space for our people to work and thrive and to grow. And this for me was an important, sort of, building block to get that right.
Working at Being Best challenges Cultural Context	CT7SP2	So, you've got a well-structured space, I think, in which decisions are made.
Working at Being Best challenges Cultural Context	CT8SP2	And the other thing is, I break down the boundaries, so what you will see is, you don't have business change and IT and business. It's one team.

Relationship	Name	Coded Text
Working at Being Best challenges Cultural Context	-IS Development Team-	She was very stressed at this session. The testing is going badly, everything seems to have been rushed, and she is being blamed. She kept holding her side, as though she was in pain. She wanted to carry on an fit the session in, because she felt the timing was always going to be difficult. I felt quite bad taking her time.
Working at Being Best changes Cultural Context	CT3SP2	so there's quite a strong to say right, this is what my software can offer. so I think there's a strong guidance, and I think it's a good thing
Working at Being Best changes Cultural Context	CT3SP2	so to me that's the big change and it's going to be here's an opportunity, what are you going to do with it. I think that's going to bring a complete uneasiness, I think that's the word, within those kind of unit's.
Working at Being Best changes Cultural Context	CT3SP2	that's the one thing I hope that will break, cos there are these 2 camps in group sourcing,
Working at Being Best changes Cultural Context	CT3SP2	we will become from a reactive unit to a proactive unit. that will bring a lot of different exposures.
Working at Being Best changes Cultural Context	CT3SP2	you'll probably find then CT7SP2 will say well I would like it like this. So we will have to probably have a very healthy debate at that time to say but this is not a standard and if you want it like that we'll have to either create a report, or you can download it in excel and change columns if you want it that way.
Working at Being Best changes Cultural Context	CT4SP2	probably a lot of the senior IP gets built into the system and it then obviously, well hopefully doesn't clone a whole lot of other people thinking exactly the same way, but it certainly provides for training, because they all have to go through a certain way of doing things. So there's benefit in that.
Working at Being Best changes Cultural Context	CT4SP2	It may reduce workload in one area, and increase workload in another area, and maybe the ultimate answer is we actually exactly where we are, except we just more efficient, OK.
Working at Being Best changes Cultural Context	CT4SP2	Now if we can build all of that thinking into the system, then we can push a button at the end of the month, and those reports are gone. If somebody wants an adhoc report of Gauteng region and not the whole of what's a name, push a button that says only Gauteng, and it gives us the what's a name. So that will take away a lot of work in terms of everyday stuff we've got to do
Working at Being Best changes Cultural Context	CT4SP2	We are building this methodology into a system, and where a junior person could have bypassed 3 or 4 steps and just got it done and got it signed, they now can't bypass it
Working at Being Best changes Cultural Context	CT5SP2	So I think that where I see things are changing a bit, where you still have someone being, and I think you do need a leader sometimes, right, so I think he still takes that leadership role, final decision making, but I think what's changed though is that and the dynamic, you can see it in the team, is that OK but what do you guys think. Give your input. Alright, challenge if you feel that you need to challenge, raise any issues and stuff like that. So I think he has allowed that to happen, which I don't think used to happen in the past.
Working at Being Best changes Cultural Context	CT7SP2	So, this is actually going to change a lot of how people work. So I think the whole design principle is a win, and maybe your cultural, because to be inclusive and try and expose people, involve them in the workshop, involve them in the design process, etc. etc., etc.
Working at Being Best changes Cultural Context	CT9SP2	An application with a UI, and which will have to tweak your behavior in terms of following the workflow that is written into the application. So once we have that sorted and they'll
Working at Being Best changes Cultural Context	CT9SP2	And even the business analyst. normally in a core meetings you don't have them there, but what we do have is that the system and the work is brand new to everybody, and therefore we entrenching through a different model, we're entrenching the business analyst to actually become the de facto knowledge base person for that system

Table 31. Relationships between themes, sources and related data extracts from Blend

9.12 Summary of the Performing Frames of Both Cases

Kindle			Blend		
Performing Frames	**Organizational Managers**	**IS Development Team**	**Performing Frames**	**Organizational Managers**	**IS Development Team**
Defining Success			Defining Success		
- *Success criteria* - *Pragmatic refinement of criteria* - *Methodology principles*	Measurable, short term criteria are important. Refine criteria in view of contextual factors.	Long term criteria are more important. Principles inherent in development methodologies must be applied.	- *Success criteria*	Measurable, short term criteria are important. Sub-unit criteria are considered.	Long term criteria are more important.
Working at Being Best Dealing with Challenges			Working at Being Best Dealing with Challenges		
- *Organizational values and norms* - *Fear*	Withhold the reporting of bad news. Deal with the issue rather than the individual. Fear of consequences. Emphasis on a positive outlook. A legacy discouraging expressing concern. Fear of consequences.		- *Organizational values and norms* - *Using relationships*		The reporting of bad news is delayed. The delivery of bad news is not well received. Good relationships mitigate risk fallout.
- *Support for risk management*	Risk management process is supported. Risk management of the IS initiative is not supported.	Risk management should be surreptitious. Hesitancy to disclose risk.	- *Support for risk management*	Risk management process partly supported.	Risk management is surreptitious. Hesitancy to disclose risk.
Working at Being Best Enacting Agency			Working at Being Best Enacting Agency		
- *Inherent values & capability of technology* - *Inherent values in development*	Authority can manipulate technology. The capability of the technology can change existing practice.	Specialists on old technology change new technology to match their expertise. Values inherent in new	- *Inherent values & capability of technology*	Those in authority can manipulate technology. The capability of the technology changes	

Kindle			Blend		
Performing Frames	**Organizational Managers**	**IS Development Team**	**Performing Frames**	**Organizational Managers**	**IS Development Team**
methodologies	Values inherent in new development methodologies can change practice.	development methodologies determine the values of IS development teams. New technology challenges the status of existing specialists.		existing practice. The capability of the technology enables potential and motivates. Inherent values in technology unite individuals and groups.	
Working at Being Best Leading			Working at Being Best Leading		
- *Organizational values and norms*	A commitment to respect people. Bottom line is most important.	Slogans and signage indicate important values. Size and complexity override organizational norms.	- *Organizational values and norms*	Espoused commitment to concern for people.	
- *Relationships*	Relationships matter.	Relationships matter.	- *Relationships*	Relationships are important.	Relationships are important.
- *Collaboration*	Mixed views on inclusive participation.	A collaborative approach to software development is important.	- *Collaboration*	Mixed framing for inclusive participation.	Mixed framing on collaboration.
- *Empowerment*	Autonomy is desirable.	Autonomy improves productivity.	- *Empowerment*	No empowerment with some exceptions.	Autonomy happens and it improves productivity.
Assessing Achievements			Assessing Achievements		
- *Organizational values* - *Peer pressure* - *Past experience* - *Time*	Excellent performance is anticipated. Draw on past experience. Assessments are time bound.	Organizational values are more important than progress. Peer pressure and professional pride count.	- *Organizational norms* - *Short & long term measures*	Assessment not necessarily related to defined success criteria. Adhere to norms in the sub-unit. Consideration of short & long term measures.	Assessment not necessarily related to defined success criteria. Consideration of both short and long term measures.

Table 32. Summarized findings for each case after within-case analysis

9.13 Cross-case Summarized Conclusions – Similarities and Differences Between the Cases

Performing Frames	**Organizational Managers**		**IS Development Team**	
Properties	Similarities	Differences	Similarities	Differences
Defining Success				
- *Success criteria* - *Pragmatic refinement of criteria* - *Methodology principles*	Measurable, short term criteria are important.	Refine criteria in view of contextual factors. Sub-unit criteria are considered.	Long term criteria are considered more important.	Importance of principles inherent in development methodologies
Working at Being Best Dealing with Challenges				
- *Organizational values and norms* - *Fear* - *Support for risk management* - *Using relationships*	Withhold the reporting of bad news. Emphasis on a positive outlook. A legacy discouraging expressing concern. Fear of consequences. Risk management process partly supported.	Deal with the issue rather than the individual.	The reporting of bad news is delayed. The delivery of bad news is not well received. Risk management is surreptitious. Hesitancy to disclose risk.	Good relationships mitigate risk fallout.
Working at Being Best Enacting Agency				
- *Inherent values & capability of technology* - *Inherent values in development methodologies*	The capability of the technology changes existing practice. Those in authority can manipulate technology.	Values inherent in new development methodologies change practice. The capability of the technology enables potential and motivates. Inherent values unite individuals and groups.		Specialists on old technology change new technology to match their expertise. New technology challenges the status of existing specialists. Values inherent in software development methodologies determine the values of IS development teams.
Working at Being Best Leading				
- *Organizational values and norms* - *Relationships* - *Empowerment*	Concern for people. Mixed views on inclusive participation. Relationships are important.	Bottom line is most important. Autonomy is desirable. Generally no empowerment with some exceptions.	Relationships are important. Autonomy improves productivity. A collaborative approach to	Size and complexity override organizational norms. Slogans and signage indicate important values.

Performing Frames	**Organizational Managers**		**IS Development Team**	
Properties	Similarities	Differences	Similarities	Differences
- *Collaboration*			software development is important. Mixed framing on collaboration.	
Assessing Achievements				
- *Organizational values and norms* - *Peer pressure* - *Past experience* - *Time* - *Short & long term measures*		Adhere to norms in the sub-unit. Draw on past experience. Assessment not necessarily related to defined success criteria. Consideration of both short and long term measures. Excellent performance is anticipated. Assessments are time bound.		Assessment not necessarily related to defined success criteria. Consideration of both short and long term measures. Peer pressure and professional pride count. Organizational values are more important than progress.

Table 33. Similarities and differences between each social group after cross-case analysis

9.14 Propositions with Associated Performing Frames, Theoretical Concepts and Empirical Data

Key
Shared Views
Bounded Views

Organizational Managers

Performing Frames	Synthesis & Associated Empirical Data	Proposition	Theoretical Concepts
Assessing Achievements *- Organizational values and norms* *- Short & long term measures*	Assessment not necessarily related to defined success criteria. *"I want to see someone sitting in that chair for 8 hours."*	10	Culture/Performance
Assessing Achievements *- Organizational values and norms* *- Short & long term measures*	Adhere to norms in the sub-unit. *"...we not people like marketing or whatever that put up big sports, we just don't do it, we don't brag enough."*	10	Culture/Performance
Assessing Achievements *- Organizational values and norms* *- Short & long term measures*	Consideration of both short and long term measures. *"There's a project plan, when we stick to that then I am saying we are performing"* *"...how do we actually build a platform for what we want to do going forward."*	10	Culture/Performance
Assessing Achievements *- Past experience* *- Organizational values and norms* *- Time* *- Peer pressure*	Excellent performance is anticipated. *"...everyone does what they are required to do or better, and that surely cannot be the case."*	10	Culture/Performance
Assessing Achievements *- Past experience* *- Organizational values and norms* *- Time* *- Peer pressure*	Drawing on past experience. *"There is definitely a bit of more openness to consider the context in which the project delivers"*	10	Culture/Performance
Assessing Achievements *- Past experience* *- Organizational values and norms* *- Time* *- Peer pressure*	Assessments are time bound. *"...last year you would celebrate... ...and next year March you say well we've got to ... ...redo a whole piece of work which was not done properly".*	10	Culture/Performance
Dealing with Challenges *- Organizational values and norms* *- Fear*	*Withhold the reporting of bad news.* *"We wait too long before you actually say, guys I need to escalate."* *"I don't always think they tell us everything they know."*	4	Culture/Performance
Dealing with Challenges	Deal with the issue rather than the individual.	4	Culture/Performance

Key
Shared Views
Bounded Views

Organizational Managers

Performing Frames	Synthesis & Associated Empirical Data	Proposition	Theoretical Concepts
- Organizational values and norms *- Fear*	*"So while we will all play the issue rather than the person"*		
Dealing with Challenges *- Organizational values and norms* *- Fear*	*Emphasis on a positive outlook.* *"...a very positive view of everything"* *"Don't always just paint this rosy picture"* *"I think we are in more trouble than what people say publicly."*	4	Culture/Performance
Dealing with Challenges *- Organizational values and norms* *- Fear*	A legacy discouraging expressing concern. *"In the distant past people were really discouraged from expressing concern"* *"...bad news doesn't flow uphill fast enough."*	4	Culture/Performance
Dealing with Challenges *- Organizational values and norms* *- Fear*	Fear of consequences. *"I've seen where project and programme managers have been brutally honest of all the problems and challenges, yuh, they get nailed"*	4	Culture/Performance
Dealing with Challenges *- Support for risk management*	Risk management process partly supported. *"A standing agenda item in core team meetings."* *"Lack of attention to planning risk responses."*	6	Culture/Performance
Dealing with Challenges *- Support for risk management*	Risk management of the IS initiative is partly supported. *"We think because we have a plan, we can predict what is going to happen."* *"There is no discussion in the Steerco on risk."*	6	Culture/Performance
Defining Success *- Success criteria* *- Pragmatic refinement of criteria* *- Methodology principles*	Measurable, short term criteria are important. *"I think it is about growth, and cost reduction, and that's what will be measured"* *"Unless you talk numbers, actually you are wasting my time."*	10	Culture/Performance
Defining Success *- Success criteria* *- Pragmatic refinement of criteria* *- Methodology principles*	Refine criteria in view of contextual factors. *"...we've been very successful in terms of the business adoption of the system."*	10	Culture/Performance
Defining Success	Measurable, short term criteria are important. *"We are working towards targets."*	10	Culture/Performance

Key
Shared Views
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Organizational Managers

Performing Frames	Synthesis & Associated Empirical Data	Proposition	Theoretical Concepts
- Success criteria			
Defining Success *- Success criteria*	Sub-unit criteria are considered. *"How do you actually use this, pull it into this and enable people."*	10	Culture/Performance
Enacting Agency *- Inherent values & capability of technology*	Those in authority can manipulate technology. *"You'll probably find then CT7SP2 will say well I would like it like this."*	8	Culture/Leadership
Enacting Agency *- Inherent values & capability of technology*	The capability of the technology changes existing practice. *"We will stick to vanilla as far as possible, and everybody will have to fit in to that sort of criteria."*	8	Culture/Leadership
Enacting Agency *- Inherent values & capability of technology*	The capability of the technology enables potential and motivates. *"...it's going to be here's an opportunity, what are you going to do with it?"* *"…it becomes demotivating... And that was my big concern, and that was why the system for me was so important."*	8	Culture/Leadership
Enacting Agency *- Inherent values & capability of technology*	Inherent values unite individuals and groups. *"...it must be, you know, of such a nature that everyone can just plug in and become part of the family."*	8	Culture/Leadership
Enacting Agency *- Inherent values & capability of technology* *- Inherent values in development methodologies*	Those in authority can manipulate technology. *"I'll adapt the system to my way of working…"* *"This is what we have, we want exactly that."*	8	Culture/Leadership
Enacting Agency *- Inherent values & capability of technology* *- Inherent values in development methodologies*	The capability of the technology changes existing practice. *"My staff needs to become... ...less technical in a sense from a [specialist] perspective."*	8	Culture/Leadership
Enacting Agency *- Inherent values & capability of technology*	Values inherent in new development methodologies change practice. *"…there are certain expectations of leaders that are built into the methodology."*	8	Culture/Leadership

Key
Shared Views
Bounded Views

Organizational Managers

Performing Frames	Synthesis & Associated Empirical Data	Proposition	Theoretical Concepts
- Inherent values in development methodologies			
Leading *- Collaboration*	Mixed views on inclusive participation. *"I never get the sense that you cannot say something."* *"…to be listened to and to be heard. In some areas I don't observe that."*	3	Leadership/Performance
Leading *- Collaboration*	Mixed framing for inclusive participation. *"We try to give everybody a chance, if someone doesn't want to contribute, but I think overall there's good contribution."* *"...people are very careful. So when you ask people to make decisions, (??) I need to consult with my manager first..."*	3	Leadership/Performance
Leading *- Relationships*	Relationships are important. *"What's actually important I believe in this business, and what has made it successful, is its ability to manage relationships."*	2	Culture/Leadership
Leading *- Relationships*	Relationships matter. *"You can't deliver without relationships."* *"...relationship takes precedence over everything else."*	2	Culture/Leadership
Leading *- Empowerment*	Autonomy is desirable. *"Most people I hope experience themselves as empowered."* *"If you want something big and complex to be done… don't let them be interfered with…"*	3	Leadership/Performance
Leading *- Empowerment*	Generally no empowerment with some exceptions. *"... dominated by middle aged, men, white men, who always made the decisions. And I think that legacy still lives..."* *"It's actually about empowering people to make decisions."*	3	Leadership/Performance

Table 34. Propositions with associated performing frames, theoretical concepts and empirical data of organizational managers

Key
Shared Views
Bounded Views

IS Development Teams

Performing Frames	Synthesis & Associated Empirical Data	Proposition	Theoretical Concepts
Assessing Achievements *- Organizational values and norms* *- Short & long term measures*	Assessment not necessarily related to defined success criteria. *"...how we've been able to position our requests for funding."* *"It's not like we are not doing anything."*	11	Culture/Performance
Assessing Achievements *- Organizational values and norms* *- Short & long term measures*	Consideration of both short and long term measures. *"...come within the budget and timescales."* *"...get the most successful outlook for the client."*	11	Culture/Performance
Assessing Achievements *- Past experience* *- Organizational values and norms* *- Time* *- Peer pressure*	Peer pressure and professional pride count. *"we can see when you are not doing your work and you not performing"* *"they just want to excel the whole time"*	11	Culture/Performance
Assessing Achievements *- Past experience* *- Organizational values and norms* *- Time* *- Peer pressure*	Organizational values are more important than progress. *"We aren't making progress as fast as the programme would have liked to, but at least that, that what we are putting in is 100%."* *"People who are doing the work are working hard... ...and on that basis the project is performing well."*	11	Culture/Performance
Dealing with Challenges *- Organizational values and norms*	The reporting of bad news is delayed. *"I'm raising stuff to you, I'm telling you this, what are you doing about it?"*	5	Culture/Performance
Dealing with Challenges *- Organizational values and norms*	The delivery of bad news is not well received. *"Ja, I was like hammered again. I should sell comfort, not fear."*	5	Culture/Performance
Dealing with Challenges *- Support for risk management*	Risk management is surreptitious. *"...the guys know we are hiding money away to deal with unknown risks and stuff."*	7	Leadership/Performance
Dealing with Challenges *- Support for risk management*	Hesitancy to disclose risk. *"I'm raising the risk, the project risk, and you are not doing anything."*	7	Leadership/Performance
Dealing with Challenges *- Support for risk management*	Good relationships mitigate risk fallout. *"We look after one another. And we won't blame one another."*	7	Leadership/Performance
Dealing with Challenges	Hesitancy to disclose risk.	7	Leadership/Performance

Key
Shared Views
Bounded Views

IS Development Teams

Performing Frames	Synthesis & Associated Empirical Data	Proposition	Theoretical Concepts
- Support for risk management	*"...the testers, whoever does their bit are not upfront."* *"...hesitation in putting something on the risk log."*		
Dealing with Challenges *- Support for risk management*	Risk management should be surreptitious. *"I'm setting the expectations very low and I'm not committing anything past July"* *"…a governance forum. What happens is if there is a concern, it pops out there."*	7	Leadership/Performance
Defining Success *- Success criteria* *- Pragmatic refinement of criteria* *- Methodology principles*	Principles inherent in development methodologies must be applied. *"We kind of really embraced almost, the Agile ethos."*	11	Culture/Performance
Defining Success *- Success criteria*	Long term criteria are considered more important. *"If I don't have happy end users, it actually means nothing."* *"...it's a value proposition to me."*	11	Culture/Performance
Defining Success *- Success criteria* *- Pragmatic refinement of criteria* *- Methodology principles*	Long term criteria are more important. *"They don't want to go back to the old ways of doing things."*	11	Culture/Performance
Enacting Agency *- Inherent values & capability of technology* *- Inherent values in development methodologies*	Specialists on old technology change new technology to match their expertise. *"...the way the system was designed, configured... ...now we are trying, we are rectifying that."*	9	Culture/Performance
Enacting Agency *- Inherent values & capability of technology* *- Inherent values in development methodologies*	New technology challenges the status of existing specialists. *"...you don't own the UI..."* *"...you're on the mainframe, you know nothing."*	9	Culture/Performance
Leading *- Collaboration*	Mixed framing on collaboration. *"Um, you don't feel confident to give your input or argue a point."*	3	Leadership/Performance

Key
Shared Views
Bounded Views

IS Development Teams **Performing Frames**	**Synthesis & Associated Empirical Data**	**Proposition**	**Theoretical Concepts**
	"That's a very open forum, and people are not afraid to speak their minds."		
Leading *- Collaboration*	A collaborative approach to software development is important. *"And the thing that to me is pleasing is that they put that, we put that plan down together."*	3	Leadership/Performance
Leading *- Relationships*	Relationships are important. *"To me, it's a game about relationships. Me and my stakeholders, I have lots of chats with them."*	2	Culture/Leadership
Leading *- Relationships*	Relationships matter. *"...still spend a lot of my time to make sure all the relationships keep on going."*	2	Culture/Leadership
Leading *- Empowerment*	Autonomy improves productivity. *"No one tells us how to do it."* *"…that gives you a big productivity boost."*	3	Leadership/Performance
Leading *- Empowerment*	Autonomy happens and it improves productivity. *"So as long as you satisfy his requirements, he doesn't tell you how to do it."*	3	Leadership/Performance

Table 35. Propositions with associated performing frames, theoretical concepts and empirical data of IS development teams