PUBLIC ADMINISTRATION RELEVANCY: CIOs NARRATIVES ABOUT

INFORMATION TECHNOLOGY PROJECT EXPERIENCES WITHIN CALIFORNIA

STATE GOVERNMENT

by

Demetra L. Davis

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CALIFORNIA STATE GOVERNMENT

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ABSTRACT

This study analyzed the problem implementing large-scale information technology (IT) projects. Although the issue also affects indiscriminately the private and public sectors at all levels, the research focused on the State of California public administration organizations. This was accomplished through a qualitative research method that documented individual narratives using biographic, experiential, and reflective data collected through a written questionnaire and individual in-person interviews. The participants were nine public administration executives serving as chief information officers (CIO), agency information officers, deputy directors, or project directors, who had similar responsibilities leading large-scale IT projects. Data analysis through the all quadrants all levels theoretical framework disclosed the internal environment's profound affect on IT projects versus external environmental conditions. These interviews revealed that leadership, social relationships, organizational strategy, and bureaucratic processes influenced IT projects' acutely influenced outcomes. The leadership role continued to matter but vestiges of sociotechnical systems like relationships, strategies, and processes were equal reasons for IT projects failures or successes. The internal organizational dynamics led to the research conclusion that despite California decision-makers' concentration on statewide mandated frameworks, the external control agency processes had minimum effect on IT projects. The findings suggested a more worthwhile investment was to develop leaders with the full complement of knowledge, skills, and abilities suited to lead complex IT projects.

Keywords: IT projects, leadership, organizational management, public administration, change management; project management

## DEDICATION

I am here, because you were there. To my family and friends who were extraordinary during this journey, especially my parents. From your struggles and victories, I stand. Although my father rests in peace, his stories about workplace dynamics and valuing my personal worth still resonate. To my mother full of grace and fierce determination, simply you are everything. To all, thank you for always loving me no matter the circumstances or accomplishments. Unapologetically, I borrow a few lines from the poem "Stop all the Clocks," by W. H. Auden, to convey the depth and breadth of your influence.

[You are] "my North, my South, my East, and West,

My working week and my Sunday rest,

My noon, my midnight, my talk, my song…" (Auden, 1940).

# ACKNOWLEDGMENTS

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Chapter 1

State of California Large-Scale IT Projects

In 2015, after the California's Bureau of State Audits published findings about the

Department of Consumer Affairs $96 million BreEZe information technology (IT)

project problems, another round of public incrimination began concerning large-scale IT

projects (Howle, 2015a, 2015b; McGreevy, 2015; Ortiz, 2015a, 2015d). The audit found

the project conceptually flawed, late, and experiencing significant cost overruns.

Reinforced was a long-held public perception about organizational capacity and

leadership ability. Since 2010, at least seven California IT projects costing approximately

$2 billion were unsalvageable (Arns, 2013; Krigsman, 2012; Megerian, 2013a). Several

additional projects deemed problematic increased the potential loss to approximately $3.7

billion (Arns, 2013; Ortiz, 2015c).

Organizational change using IT projects is difficult for all business sectors and

organizational types (By, Diefenbach, & Klarner, 2008; Chua, 2009; Conboy, 2010;

Franken, Edwards, & Lambert, 2009; Rosacker & Rosacker, 2010). Failure is common

despite 35-years of studies investigating the problem. The private sector research is a

limited case study collection extending beyond United States borders. However, a

consensus formed that the problems were attributable to generalizable factors like people,

process, technical, and uncontrollable external events (Chua, 2009; Conboy, 2009;

Willcocks & Margetts, 1993). The research findings reaffirmed a widespread belief that

large-scale IT project failures were inevitable (Chua, 2009; Conboy, 2009; Willcocks &

Margetts, 1993).

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Public administration large-scale IT projects research followed suit (Gauld, 2006; Goldfinch, 2007; Kim & Vandenabeele, 2010; Loukis & Charalabidis, 2011; Zecheru, 2013). Contributing to the research limitations was public administrators' hesitancy to partner with scholars to understand the root causes (Pawlowska, 2004; Shapiro & Rynes, 2005). In many instances, political interests and legal concerns superseded an in-depth analysis into problems (Arns, 2013; Gauld, 2006; Goldfinch, 2007; Loukis & Charalabidis, 2011; Ortiz, 2014, 2015d). The few researchers who studied the problem recommended further research into the layered dynamics (Gauld, 2006; Goldfinch, 2007; Loukis & Charalabidis, 2011). Therefore, the adopted multifocal theoretical lens enlarged and enriched the IT project implementation scholarship.

**Background of the Problem**

Public and private sector organizational leaders' used IT projects to implement strategies despite the high rate of unsuccessful outcomes (Gilbert & Reid, 2009; Henderson & Venkatraman, 1999; Shane, 2009; Tidd & Bessant, 2009). The results overshadowed the fact that during the past 40 years, projectized organizations using technology became an operational norm (Komkov, Lugovtsev, & Yakunina, 2012; Obeidat & North, 2014; Rosacker & Rosacker, 2010; Townsend, 2010). Private sector organizational leaders adopted matrix structures that eliminated deep chain of commands to improve operational responsiveness to marketplace competition (Montabon, 2005; Shane, 2009; Styhre, 2001; Tidd & Bessant, 2009). The decrease in middle managers resulted in an increased dependency on projects (Montabon, 2005; Shane, 2009; Sheffield, Sankaran, & Haslett, 2012; Styhre, 2001; Tidd & Bessant, 2009).

Similar to international, federal, other states, and municipalities, California adopted business management principles like project management to affect change (Andersen, 2010; Denning, 2005; Pandey & Wright, 2006; Uchem & Erunke, 2013). The statewide California Project Management Method (CA-PMM) was the governing IT project administration framework (Department of Technology, 2014b; Ortiz, 2014, 2015b, 2015c). Unlike the internationally accepted Project Management Body of Knowledge guideline, CA-PMM addressed the bureaucratic layers that distinguish public administration from the private sector (Department of Technology, 2014b; Williams, 2015b, 2015c, 2015d, 2015e). Despite the customization, IT project failures persisted. In March 2015, California leaders authorized a companion statewide business analysis and IT project approval framework titled the State Technology Approval Reform (STAR) project approval lifecycle, commonly referred to as PAL (Department of Technology, 2015a, 2015c; Williams, 2015b, 2015c, 2015d, 2015e). The newer framework mirrored organizational management trends that emphasized business analysis and stakeholder engagement. In December 2015, the since departed statewide Chief Information Officer (CIO) announced a CA-PMM replacement (Ramos, 2015). In May 2016, the Department of Technology released the new California Project Management Framework (CA-PMF) (Department of Technology, 2016).

The changes in California's processes reflected shifting perspectives about large-scale IT projects practices and problem sources (Arns, 2013; Rosenbloom & McCurdy, 2007; Shapiro & Rynes, 2005; Van Dooren, De Caluwe, & Lonti, 2012). A counter opinion to the Bureau of State Audit findings and media criticism came from J. Clark Kelso, a former California statewide CIO. Kelso commented the media reports were

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"hysteria" that sensationalized audit findings (Williams, 2015a, p. 1). In Kelso's opinion, select projects generated the crisis, which as a group did not reflect California's organizational capabilities to develop complex IT projects (Williams, 2015a).

Media reports substantiated partially Kelso's viewpoint because the focus was on projects that failed (Howle, 2015a, 2015b; McGreevy, 2015; Ortiz, 2015a). However, his comments ran counter to existing information that approximately 70% of organizational change initiatives and 90% of IT projects fail (Bridgeland & Orszag, 2013; Davis & Baxandall, 2014; Fulk, Kwun, & Alijani, 2013; McLaughlin, 2009; Standish Group, 2013). Kelso's comments did not include his viewpoints regarding the relationship between change and organizational culture. However, organizational crisis caused by external or internal events often was the impetus for IT project implementation, which made projects "localized phenomenon" (Andrews & Boyne, 2010; Townsend, 2010, p. 76). Besides the strategic objective to improve organizations, awareness about how projects affected stakeholders or satisfied political interests was important (By et al., 2008; Goh, 2012).

Therefore, identifying causes for California's large-scale IT project problems required examination beyond previous research approaches (Gauld, 2006; Goldfinch, 2007; Loukis & Charalabidis, 2011). The available information focused primarily on process compatibility with macro and micro external factors like global business trends or bureaucratic mandates, as illustrated in Figure 1 (Ayande, Sabourin, & Sefa, 2012; Burnier, 2005; Casasanto & Boroditsky, 2007; Karmakar & Kasturirangan, 2011; Tsoukas, 2006; Wilson, 2008; Yukl, 2013). The research literature lacked substantive data about the organizational culture effect on IT projects, which is contrary to former

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Speaker of the United States House of Representatives Thomas "Tip" O'Neill's observation that all government was local (Stubben, 1989; Townsend, 2010). The implication was organizational practices reflected specific cultural values and norms determined by internal individuals and social groups (Davis & Baxandall, 2014; Fulk et al., 2013; McLaughlin, 2009; Sharma & Sharma, 2010; Tanoos, 2012).



*Figure 1*. Environmental factors. This figure illustrates California's IT project implementation environment map.

**Statement of the Problem**

       Organizational relevancy depends on the timely and cost-efficient use of IT (Bloch, Blumberg, & Laartz, 2012; Gilbert & Reid, 2009; Henderson & Venkatraman, 1999; Rosacker & Rosacker, 2010; Shane, 2009; Tidd & Bessant, 2009). The general problem was United States IT projects, without deference to business sector or organizational type, have a high failure rate (Boyd, 2008; Davis & Baxandall, 2014; Franken et al., 2009; Fulk et al., 2013; McLaughlin, 2009; Sharma & Sharma, 2010; Standish Group, 2013). Acknowledging the history and risk, California leaders authorized the development of several statewide frameworks to guide IT projects with the

intent of minimizing the problems (Department of Technology, 2014b, 2015a, 2015c, 2016; Williams, 2015b, 2015c, 2015d, 2015e).

The specific problem was that, large-scale IT projects continued to fail within California public administration organizations despite the existence of the CA-PMM, STAR, and CA-PMF frameworks. Previous case studies identified generalizable information but did not provide conclusive findings why the problem continued after 40 years of implementation attempts (Goldfinch, 2007; Loukis & Charalabidis, 2011; Willcocks & Margetts, 1993). When California IT projects failed, leaders explained the circumstances using the well-known general causes such as uncontrolled scope expansion, inadequate schedule and contract management, or resource limitations (Hiltzik, 2013; Howle & Codiner, 2011; Ingram, 1994; McGreevy, 2011; Megerian, 2013b). Absent from the analysis were the underlying factors that created people, process, or technical related problems.

California's IT project problems occurred among diverse opinions about public administration ambiguous strategic, tactical, and operational direction (Andersen, 2010; Antipova & Antipov, 2014; Desenberg, 2013; Goh, 2012; Kapucu, 2012; Raadschelders, 2011). The historical context of public administration IT projects was as a stabilizing tool after mega crisis or the means for grand reforms (Abramson, Breul, & Kamensky, 2007; Bouvard, Dohrmann, & Lovegrove, 2009; Fernandez & Rainey, 2006; Franken et al., 2009; Hagen & Liddle, 2007; Rainey & Steinbauer, 1999). Often, multi-million dollar contracts and the number of organizations affected defined large-scale IT projects. The grandeur, complexity, and contentious environment among participants and stakeholders resulted in inauspicious outcomes. The emerged characterization was the efforts

"skim[ed] the surface, cover[ed] too little ground…and [left] much of the public sector relatively untouched" (Bouvard et al., 2009, p. 29).

Therefore, the study about California large-scale IT projects benefitted from research that described real-world experiences, as recommended by previous public administration researchers like H. Simon (2000), Riccucci (2010), and Wilson (2008). Documenting different perspectives that described institutional complexity supported emerging organizational management research that encouraged a triangulated systems thinking approach (Beck & Cowan, 1996; Meadows, 2008; Morgan, 2007; Wilber, 2000a, 2000b). Theorists like Morgan (2007), Shane (2009), and Tidd and Bessant (2009) stated it was from a multi-dimensional, inclusive, and openly dynamic system that relevancy developed.

**Purpose of the Study**

The purpose of this qualitative narrative study was to examine through the CIO perspective internal organizational factors that influenced large-scale IT projects using the California's statewide mandated frameworks to determine why IT projects failed or succeeded. The purpose was not to research why a specific IT project performed poorly. Instead, the objective was to examine internal organizational cultures and practices within public administration that affected IT project outcomes. The unaccounted internal dimension supported evolving organizational management theory that IT projects do not develop in a vacuum (Collins, 2001; Denning, 2005; Schumpeter, 2010; Townsend, 2010; Zomorrodian, 2009). Projects occurred in environments with both external-internal and collective-individual polarities that created tensions (Johnson & Duberley, 2000; Morgan, 1980; Raza & Standing, 2010; Rummler & Brache, 2013).

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A fundamental means to mediate the conflicting interests was leadership, especially during change (Collins, 2001; Gupta, 2011; Kotter, 1996). The concentration on California CIOs experiences acknowledged leaders' preeminent roles in IT project endeavors in three respects. First, CIOs were the nexus between the business and IT strategic objectives. In this role, individuals determined organizational priorities and readiness to undertake projects (Battaglia, 1991; Cochrane, 2009; Dibrell, Davis, & Craig, 2009). Second, CIOs as directorates were ultimately accountable for IT projects implementation and performance. Public administration remained a top-down decision-making culture (Andersen, 2010; Barcan, 2010; Boin & Hart, 2003; Riccucci, 2010; Shapiro & Rynes, 2005). Governance was through bureaucratic layers with CIOs serving in the utmost IT power, authority, and decision-making position. Third, CIOs had de facto responsibility to connect processes (de Kluyver & Pearce, 2012; Kuratko, Goldsby, & Hornsby, 2012; Henderson & Venkatraman, 1999). Without process alignment, persistent silos and gaps between functional groups assigned with IT project tasks could persist and adversely affect the outcome. Therefore, CIOs' experiences were essential to studying the problem.

Guiding the research was a theoretical framework that integrated multiple data sources and factors (Beck & Cowan, 1996; Graves, 1974, Morgan, 2007; Wilber, 2000a, 2000b). Integral theory all quadrants all levels (AQAL) was beneficial because the framework connected unfiltered data to create holistic themes or identify patterns (Küpers, 2009; Landrum & Gardner, 2005; Wilber, 2000a, 2000b). The connection of the external-internal and individual-collective perspectives disclosed once obscure or hidden factors. Specifically, AQAL quadrants aided data organization and analysis using four

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dimensions titled *I* or personal capacity and will, *We* or relationships and shared values, *It* or organizational management philosophy and strategic approach, and *Its* or operational rules, standards, and conditions.

Therefore, the CIO experience-related data collected during in-person interviews identified internal factors about California IT project implementation failures and successes. The findings may in the long-term influence the development of a framework that improves IT project outcomes. Finally, the research substantiated the proposition that situational factors required different leadership approaches from previous practices to produce favorable organizational results (Bazigos, Gagnon, & Schaninger, 2016; Küpers, 2009; Morgan, 2007).

**Significance of the Problem**

Public administration within California matters as it provides the necessary infrastructure to support the world's sixth largest economy and a $2.496 trillion-dollar gross domestic product (GDP) index (Ashkenas, Ulrich, Jick, & Kerr, 2002; Carroll, 1994; Economist, 2014; IMF, 2016; Legislative Analyst's Office, 2015). Technology enables the delivery of services and goods to consumers internationally (Bansal, 2009; Hoque, Sambamurthy, Zmud, Trainer, & Wilson, 2006; Shane, 2009; Tuanmat & Smith, 2011; Tidd & Bessant, 2009). The inability to implement large-scale IT projects on time and within the approved scope and cost parameters has legal, regulatory, and social ramifications including health concerns as realized in Flint, Michigan water management crisis. Loss of federal funding or lawsuits by the public, interest groups, or corporations may be the unfortunate outcome of failed projects.

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Business industry surveys consistently quantify IT projects failure rate at 90% (Bloch et al., 2012; Bridgeland & Orszag, 2013; Standish Group, 2013). In a 2010 study of 5,400 international software projects completed, 66% of projects experienced cost overruns, 33% had schedule overruns, or 17% did not achieve any of the planned benefits (Bloch et al., 2012; Bouvard et al., 2009). Leadership abandonment of IT projects often occurred after the failures or risks persisted. Besides the direct expenses, indirect costs of United States project failure led to the conclusion that "out of every $100 governments spend, less than $1 has supporting or justifying evidence the investment was worthwhile" (Bridgeland & Orszag, 2013, p. 1).

**Significance of the study.** Despite the existence of change and project management frameworks and research findings that identify categorical causes, IT projects continued to experience a high failure rate (Boyd, 2008; Franken et al., 2009; Fulk et al., 2013; Sharma & Sharma, 2010; Standish Group, 2013). By examining through the CIO perspective internal organizational factors that influenced IT projects failures and successes, organizational leaders and legislators may develop enriched insight into the problem. The study findings produced information that enables the development of effective solutions.

**Significance of the study to leadership.** Emphasis on leadership continues in an era where individuals like CIOs were responsible for integrating different perspectives to achieve organizational objectives (Balogun, Gleadle, Hailey, & Willmott, 2005; Battilana, Gilmartin, Sengul, Pache, & Alexander, 2010; Kotter, 1996; Phillips & Budd, 2006; Soparnot, 2011). Historically, characteristics like vision and communications skills defined leadership no matter the circumstances or organizational type (Bazigos et al.,

2016). Evolving awareness about environmental and organizational complexity revealed the previously defined traits were merely normative qualities (Bazigos et al., 2016).

The emerging theory posited the determinant for defining effective leadership was organizational health (Bazigos et al., 2016; Korkmaz, 2007; Lencioni, 2012). Depending on organizational maturity, leadership traits beyond normative characteristics varied. Although similarities existed, each organizational instance had unique conditions that discouraged blind acceptance of leadership traits at the expense of evolving needs (Hersey & Blanchard, 1979, 1995; Lee-Kelley, 2002; Mayer, Winter, & Mohr, 2012; McCleskey, 2014).

The study on CIOs experiences implementing California large-scale IT projects influenced leadership theory in three ways. First, the research updated the descriptive about the leadership role during change events. Second, the research distinguished the specific leadership traits applicable to public administration. Third, the research identified leadership skills and abilities that facilitated successful IT project outcomes. Collectively, the role, traits, and abilities provided an applicable leadership model for large-scale IT projects implementation within public administration.

**Nature of the Study**

The research purpose was to examine through the CIO perspective internal organizational factors that influenced large-scale IT projects using the California's statewide mandated frameworks to determine why IT projects failed or succeeded. The research objective was to document project leaders' experiences during in-person interviews. By logical deduction, the research approach was a qualitative method and narrative design. Data triangulation occurred as an organic byproduct of the research

design, sources, and multifocal theoretical lens. California CIOs at the state-level oral histories were the primary data sources for the internal context but the inclusion of other sources that added context was permissible within qualitative studies (Alsaawi, 2014; Knox & Burkard, 2009; Seidman, 2006). Previous information about the external macro and micro contexts illustrated in Figure 1 was sufficient.

**Overview of the research method appropriateness.** The selected research method was qualitative because it permitted the examination of contemporary events, situations, or experiences through first-hand accounts (Cone & Foster, 2006; Creswell, 2013; Di Pofi, 2002; Leedy & Ormrod, 2010; Neuman, 2006; Willis, 2007). Qualitative research incorporates data from multiple sources to explain the problem, situation, and findings (Cone & Foster, 2006; Creswell, 2013; Leedy & Ormrod, 2010; Neuman, 2006; Willis, 2007). On the contrary, quantitative studies collect statistical data to test theory (Cone & Foster, 2006; Creswell, 2013; van Manen, 2014; Waugh & Waugh, 2004). The latter method relies on a fixed scientific rigor that sterilizes the data collection process. Emerging data or sources unidentified prior to the research initiation remains out of scope during analysis.

Qualitative methods use adaptive processes that facilitate timely validation of the data and findings (Cone & Foster, 2006; Creswell, 2013; Leedy & Ormrod, 2010; Neuman, 2006; Willis, 2007). For the study, the means to minimize irrelevant or errant data was the integration of multiple perspectives. The research process used the AQAL theoretical framework multiple quadrants to analyze data and identify meaningful themes.

**Overview of the research design appropriateness.** Narratives document stories about an experience using multiple data sources including individual interviews (Creswell, 2013; Leedy & Ormrod, 2010; Neuman, 2006; Willis, 2007). The experiences may not be uniform. Consequentially, the design affords flexibility to accommodate different and unknown data to develop findings (Creswell, 2013; Leedy & Ormrod, 2010; Neuman, 2006; Willis, 2007). The research technique uses a multi-phase approach to collect biographical, experiential, and reflective data (Alsaawi, 2014; Knox & Burkard, 2009; Seidman, 2006). The triangulation increases the research integrity and reliability. Within the first phase of the CIO study, the biographical data provided background information about CIOs training and career histories. A questionnaire sent to participants prior to the in-person interview collected background data. During the second phase, the CIOs stories recorded during interviews provided in-depth information about his or her large-scale IT project experiences. A concluding phase three question asked during the interviews permitted the opportunity to capture data about philosophical beliefs that explained how participants make sense of the experiences. The last phase helped to contextualize the second phase data. Chapter 3 includes detailed information about the interview process and questions.

Besides data triangulation, research reliability depends on the ability to generalize the findings across several subjects or business sectors (Creswell, 2013; Leedy & Ormrod, 2010; Mason, 2010; Neuman, 2006; Seidman, 2006). Narratives achieve the aforementioned through the inclusion of multiple worldviews within a research population (Mason, 2010; Seidman, 2006). Ideally, the sample group's narratives identify diverse factors that enable a meaningful data analysis. However, data saturation rigor is

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not for its own sake. Participant selection must be within the context of the research problem, purpose, and population (Creswell, 2013; Mason, 2010; Seidman, 2006). The study's measurement for data saturation was three consecutive interviews with no new information revealed.

The California state-level public administration system has approximately 300 organizations with 125 CIO positions (Department of Technology, 2014a). For the study, the CIO population size was significantly fewer after accounting for vacancies, individuals holding multiple positions, organizational designs, and experience with large-scale IT projects. Removed from consideration were organizations that did not have IT departments. The organizations received technical services through statewide data centers or other public administration organizations. Within the non-compliant organizations, resources served as project stakeholders and not leaders. An initial assessment revealed approximately 10 California organizations implemented large-scale IT projects since 2005. Therefore, the research population consisted of current or former California CIOs who served in statewide public administration organizations that implemented large-scale IT projects.

Also worth noting was the use of the CIO classification. The title use was as a blanket classification that included qualified Agency Information Officers (AIOs), deputy directors, and project directors who had similar responsibilities as CIOs regarding IT projects. Considering previous studies focusing on large-scale public administration IT projects, the proposed CIO population increased the averaged research sample size from 1.5 to 9 participants (Chua, 2009; Conboy, 2009; Gauld, 2006; Goldfinch, 2007; Istrate & Marin, 2012; Lesca & Caron-Fasan, 2007; Loukis & Charalabidis, 2011; Pan, Hackney,

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& Pan, 2008; Pawlowska, 2004; Purao, Desouza, & Becker, 2012; Willcocks & Margetts, 1993; Yuttapongsontorn, Desouza, & Braganza, 2008; Zecheru, 2013). The limitations and delimitations sections along with Chapter 3 provide further details about the design, population, and sample size.

**Research Questions**

The research questions establish the study's thesis (Creswell, 2013; Hsu & Sandford, 2010; Mason, 2010; Seidman, 2006). Within the questions are assumptions about the problem that lead to empirical evidence (Creswell, 2013; Mason, 2010; Seidman, 2006). Subquestions support the thesis and signify the type of data needed, data collection process, and analysis approach (Daymon & Holloway, 2011). For the study, the purpose was to examine through the CIO perspective internal organizational factors that influenced large-scale IT projects using the California's statewide mandated frameworks to determine why IT projects failed or succeeded.

Information about the external context macro factors illustrated in Figure 1 existed within various studies explaining the technological, economic, social, and natural resources changes (Morgan, 2007; Shane, 2009; Thompson, 2008; Tidd & Bessant, 2009). The research findings were sufficient because the determinants derived from overarching epistemological and ontological changes occurring within the global environment. Similarly, the circumstances defining external micro factors minimized further research return in value. California control agencies like the legislature, Department of Technology, Department of Finance, and the Department of General Services develop government codes, policies, and process frameworks for California state organizations' administrative practices. In the recent past, the exception were

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constitutional officers elected to their positions. Each public officer used his or her discretion to decide on which control agency government code, policies, and process frameworks to follow related to IT projects.

The prospect of developing substantial new data about the specific problem was most promising from within organizations' internal environments (Chua, 2009; Gauld, 2006; Goldfinch, 2007; Willcocks & Margetts, 1993). Common among leadership theory was leaders' responsibility to manage the internal environment through decisions and actions that influenced practices (Chin & Sanchez-Hucles, 2007; Gallos, 2006; Jones, 2010; Yukl, 2013). Therefore, the research questions focused on CIOs' IT project experiences as they related to the organizational system including culture, leadership philosophy, structures, strategies, group beliefs, and process norms. The research questions supported an integrative praxis that consisted of the AQAL theoretical framework I, We, It, and Its quadrants. The central research question was:

RQ. What are California CIOs internal organizational success and failure experiences implementing large-scale IT projects?

The subquestions were:

SQ1. What are the organizational, technical, process, and people-oriented factors that affect California public administration large-scale IT projects success and failure?

SQ2. How do external factors like CA-PMM, STAR, and CA-PMF frameworks affect internal organizational practices during large-scale IT projects implementation?

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SQ3. What is leadership's role during large-scale IT project implementation that influences success or failure?

SQ4. What are the leadership traits and abilities that facilitate successful large-scale IT project outcomes?

**Theoretical Framework**

The theoretical framework is the philosophical context that makes the research findings meaningful (Creswell, 2013; Green, 2014; Hsu & Sandford, 2010; Moustakas, 1994; van Manen, 2014). In addition, the framework establishes an order (Andersen & Kragh, 2010; Green, 2014; Kemoni, 2008). Conveyed within the chosen approach are implicit and explicit information about the problem, research purpose, literature, and the data analysis process. Without the reference, expectations about the research may be different from the intent (Andersen & Kragh, 2010; Green, 2014; Kemoni, 2008).

**Theoretical framework development history**. AQAL evolved from behavioral research (Küpers, 2009; Wilber, 2000a, 2000b). Freud's ego theory along with transactional analysis, emotional intelligence, and agency theory inspired the exploration of individuals' hidden motivations that influence behavior within organizations (Berne, 1961, 1964; Breger, 2012; Delanty & Strydom, 2003; Eisenhardt, 1989; Hogan & Kaiser, 2005; Nazir, Shah, & Zaman, 2013). Emerging theories like Graves' (1974) levels of development, Beck and Cowan's (1996) spiral dynamics, and Morgan's (2007) holograms applied the concept to organizational management. The AQAL theoretical framework was a departure from others like Willcocks and Margetts' (1999) risk management factors model. Chapter 2 details the risk management factors model but an aspect was the identification of IT project problems by the outer context, inner context,

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content, process, and outcome categories. The clinical analysis traditionally did not delve into the inner behavioral dimensions or relationship among the factors.

A system theory perspective like AQAL is beneficial in examining organizations internal factors and relationships (Chun, Soh, & Arling, 2009; Meadows, 2008; Yukl, 2013). The framework's interdisciplinary approach afforded the means to link independent or obscure data into holistic narratives. The multi-faceted framework includes quadrants, lines, states, levels, and types (Küpers, 2009; Wilber, 2000a, 2000b). For the purpose of the study, quadrants were sufficient to guide the data collection and analysis process. Figure 2 shows the four distinct and comprehensive dimensions.

| | INTERIOR | EXTERIOR |
|---|---|---|
| **INDIVIDUAL** | Intentional – What I Experience<br>• Leadership perceptions<br>• Leader's values, beliefs, norms<br>• Leader's will<br>• Leader's emotions<br><br>*SUBJECTIVE REALITIES*<br>I | Behavioral – What I Do<br>• Organizational philosophy/strategy<br>• Organizational management style<br>• Quality control<br><br>*OBJECTIVE REALITIES*<br>IT |
| **COLLECTIVE** | WE<br>Cultural – What We Experience<br>• Social culture<br>• Shared values, beliefs, norms<br>• Relationships<br>• Perceived political, economic, technological, social, and environmental pressures<br>*INTERSUBJECTIVE REALITIES* | ITS<br>System / Structure – What We Do<br>• Governance institutions<br>• Operational realities<br>• Laws, rules, regulations<br>• Visible political order, economic systems, societal structures, and resource management<br>*INTEROBJECTIVE REALITIES* |

*Figure 2*. AQAL theoretical framework quadrants. This figure was adapted from "A theory of Everything," by Wilber, 2000a, p. 61. Copyright 2000 by Shambhala. "The Status and Relevance of Phenomenology for Integral Research," by Küpers, 2009, *Integral Review*, *5*(1), p. 83. Copyright 2009 by Wendelin Küpers.

- I quadrant: Leader's experiences (interior, subjective, self-knowledge, individual capacity),

- We quadrant: Group experiences (interior, intersubjective, social culture, relationships),

- It quadrant: Management philosophy (exterior, objective, visible, organizational strategy), and

- Its quadrant: Organizational practices (exterior, interobjective, rules, processes) (Küpers, 2009; Landrum & Gardner, 2005; Wilber, 2000a; 2000b).

**Environment contexts and relationships**. Narratives are subjective because the research design uses individual recollections about an experience or event (Creswell, 2013; Leedy & Ormrod, 2010; Neuman, 2006; Willis, 2007). The AQAL framework organizes the inherent complexity caused by the existence of various CIOs perspectives and multiple environmental contexts (Küpers, 2009; Wilber, 2000a, 2000b). Specifically, AQAL explained the relationships and overlaps from the three contexts depicted in Figure 1. The four quadrants added depth to the one-dimensional illustration.

First, globalism, environmental, social, technical, and economic external macro factors affected IT project outcomes (Casasanto & Boroditsky, 2007; Karmakar & Kasturirangan, 2011; Tsoukas, 2006; Yukl, 2013). Often identified as opportunities or threats, the factors are uncontrollable but emerged with global philosophical shifts (Bird, 2011; Freidman, 2002; Kuhn, 1996; Sent, 2003). The external macro context has a direct and in-direct influence on perspectives found within the AQAL quadrants of I or leadership, We or social relationships, and It or organizational strategic approaches. In short, the quadrants convey how individuals and groups make sense of the world.

The micro external context of governance policies and frameworks developed by public administration control agencies concerns the adopted actions of organizational leaders and social groups. Control agencies are federal and state authorities that develop mandates, laws, regulations, and rules. These external factors are internal to public administration generally but external to specific organizations. Within California, representative of this context are the Department of Technology's IT project management frameworks including CA-PMM, STAR, and CA-PMF. The AQAL quadrants of I, We, and Its or process reveals the implementation practices of leaders and social groups.

The internal context is the metaphoric third rail because of political and cultural sensitivities within organizations (Pawlowska, 2004; Shapiro & Rynes, 2005). Public administration internal environment is a guarded culture because, in part, within these environments are organizational strengths and weaknesses. The AQAL quadrants of I, We, It, and Its relationships explains the relationship and complexity of actual experiences inclusive of content, process, and outcome. Therefore, the internal context within organizations was the research focus.

**Bias Contagion**

The law of contagion states bias spreads with the interaction between participants and researchers (Erisen, Lodge, & Taber, 2014; Rozin & Royzman, 2001; Weisbuch & Pauker, 2011). Traces of prejudiced beliefs may transfer from one entity to another even with research rigor and diligence. Bias contagion happens for several reasons. First, research like narratives may unintentionally have bias because the stories are personal recollections about past events (Erisen et al., 2014; Rozin & Royzman, 2001). Acerbating the situation is information complexity. If communications or analysis is not

straightforward, then the stories may elicit participant or researcher reactions that include

freezing, withdrawal, or fleeing (Rozin & Royzman, 2001). Once present, bias

development is rapid and contagious (Erisen et al., 2014; Rozin & Royzman, 2001).

The second cause of bias contagion is individual predisposition (Erisen et al.,

2014; Rozin & Royzman, 2001; Weisbuch & Pauker, 2011). Aversion to situations,

phobias, or innate fear may create bias (Erisen et al., 2014; Rozin & Royzman, 2001).

Third, time and place may cause bias contagion (Rozin & Royzman, 2001; Weisbuch &

Pauker, 2011). In some situations, positive and negative impressions occur

simultaneously. With time, memories of positive experiences may fade. Consequentially,

the negative impression becomes dominant because of social conditioning, language

cues, and personal proclivity toward negative memories (Erisen et al., 2014; Rozin &

Royzman, 2001; Weisbuch & Pauker, 2011).

**Bias Contagion Interventions**

Prevention of bias contagion is more challenging within qualitative behavioral

science than quantitative research because of the close interaction between the

participants and researcher (Connor & Becker, 1977; Hewstone, Rubin, & Willis, 2002;

McKnight, 2011; Wilholt, 2009). Awareness about participants' feelings and beliefs is

imperative (Connor & Becker, 1977; Hewstone et al., 2002). Candid and direct

discussions about biases bring the issue to the forefront (Hewstone et al., 2002). Another

means to contain bias is through behavior such as the researcher demonstrating empathy

(Hewstone et al., 2002). Affinity helps to minimize in-group and out-group perceived

threats commonly found in public administration research (Hewstone et al., 2002;

Shapiro & Rynes, 2005). The researcher should remain aware about comments or

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observations concerning participants' behaviors (Connor & Becker, 1977). In addition, perceptions and senses may mislead the research in multiple ways including the inaccurate documentation of participants' responses. Prejudiced data analysis may result from zealous commitment to philosophical beliefs (McKnight, 2011). For the study, intervention entailed the researcher adhering to research rigor and ethical standards codified through the Collaborative Institutional Training Initiative and University of Phoenix.

**Definition of Terms**

Research value depends, in part, on effective communications. Definitions clarify terms or phrases to enhance shared understanding. This section contains definitions or less familiar terms and phrases used in the study.

**All quadrants all levels (AQAL) or integral theory**. Metatheory used to explain the comprehensive factors influencing organizations or individuals by examining quadrants, levels, lines, states, and types (Wilber, 2000a, 2000b).

**California project management framework (CA-PMF)**. Current California statewide framework used to manage IT projects (Department of Technology, 2016; Ramos, 2015).

**California project management methodology (CA-PMM)**. Former California statewide framework used to manage IT projects (Department of Technology, 2014b).

**Control agencies**. Public administration organizations responsible for establishing policies related to human resources, fiscal, or IT (State of California, 2016; State Controller's Office, 2016). The organizations monitor and audit organizations to ensure compliance.

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**Implementation**. In the context of the study, implementation includes strategic planning, project planning, product development, and project rollout into the production environment.

**Integral theory or all quadrants all levels (AQAL)**. Metatheory used to explain the comprehensive factors influencing organizations or individuals by examining quadrants, levels, lines, states, and types (Wilber, 2000a, 2000b).

**Project approval lifecycle (PAL)**. Another name for stage gate process defined in STAR. The gates include Stage 1 business analysis, Stage 2 alternatives analysis, Stage 3 solution development, and Stage 4 project readiness and approval (Department of Technology, 2015b).

**Projectized**. An organizational culture and structure matrix to manage IT project resources. Leaders authorize project managers to make decisions, set priorities, and manage resources (Komkov et al., 2012; Obeidat & North, 2014; PMI, 2013; Rosacker & Rosacker, 2010).

**State technology approval reform (STAR)**. Current California framework used to plan and approve IT projects through a four-stage approval process (Department of Technology, 2015a, 2015c).

## Assumptions

Assumptions are basic propositions believed to be true about the study (Leedy & Ormrod, 2010; M. Simon, 2011). A first assumption for the study was participants' willingness to share truthfully inward judgments, cynicisms, fears, and decisions, which may cause uncomfortableness or ostracizing if the reflections disclose insensitive social or political beliefs (Goleman, 2004; Goleman, Boyatzis, & McKee, 2001; Guillén &

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Florent-Treacy, 2011; Rosete & Ciarrochi, 2005; Scharmer, 2009a, 2009b, 2010). Self-reflection and ease in sharing innermost thoughts, feelings, beliefs, and observations are not mutually exclusive. Mitigation of the assumption occurred by reiterating research confidentiality and the measures adopted to protect participants' identity. Participants received an Informed Consent (Appendix A) that included language that participation was voluntary and withdrawal from the research could occur without penalty or prejudice. Another measure that appeared to alleviate participants' anxiety was the reassurance that the participant would be able to review the transcripts.

A second assumption was political, social, and personal financial interests influenced CIO decisions and actions. The three environmental factors align with Maslow's (1999) hierarchy of needs safety and security psychological conditions. The concentrated geography of California statewide public administration organizations creates a fraternity among CIOs. In some instances, the relationships formed through familial connections, childhood friendships, or as early career peers. Participating in politically sensitive studies is a risk that could threaten social status or income. Groupthink or reluctance to participate fully in the study may occur (Fernandez, 2007; Hart, 1998; Rosete & Ciarrochi, 2005; Thompson, 2008). The researcher mitigated this concern by conducting separate interviews in a neutral location. The researcher reassured the CIOs that the narrative was about his or her story without judgment. Measurement was not through the lens of right or wrong but in documenting the experience. The informed consent measures described prior were sufficient for managing this assumption.

A third assumption was despite preferences for the status quo, political pressures, or stakeholder interests, the CIOs were earnestly interested in identifying and correcting

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IT project implementation problems (Andersen, 2010; Barcan, 2010; Boin & Hart, 2003; Uchem & Erunke, 2013). Prior information on public administration found conflicts of interest often resulted in change initiatives failings (Bouvard et al., 2009). The individual resolve to narrow the possible gap between espoused beliefs and actions was ensconced in this assumption. The mitigation strategies described prior were sufficient for managing this assumption.

A fourth assumption was CIOs as the selected population was appropriate to capture the breadth of internal organizational factors affecting IT project outcomes. The belief assumed the individuals promoted through the ranks. The career advancement afforded CIOs the accumulation of experiences at the middle management and project management levels.

For the study, the assumptions developed prior to the data collection phase were accurate. Alleviating the participants' concerns was the interview protocol practice. The researcher at the start and end of each interview restated the informed consent commitments and reviewed other research measures undertaken. A discussion about the interview, data collection, and data analysis protocols appears within Chapter 3 and 4.

**Scope and Limitations**

**Scope.** IT project failures occur in all business sectors and organizational types (By et al., 2008; Franken et al., 2009; Rosacker & Rosacker, 2010). Absolute certainty about the reasons for the failures is elusive. The research scope was to examine through the CIO perspective internal organizational factors that influenced IT projects using the California's statewide mandated frameworks to determine why IT projects failed or succeeded.

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**Limitations.** Within research, limitations beyond researchers' control exist (Leedy & Ormrod, 2010; Neuman, 2006; M. Simon, 2011; Willis, 2007). The first limitation was the pervasiveness of large-scale IT project failures within private and public sector organizations did not permit the inclusion of the entire affected group. Second, CIOs office locations were within various Sacramento-area organizational headquarters. The circumstances may have captured unintentionally regional perspectives or idiosyncrasies not applicable when benchmarking the findings. A third limitation was the research timeframe, which affected the study in two ways. The timeframe fixed the study to a specific era. How the events were similar or dissimilar to other eras was not in scope. In addition, time limitation made only the AQAL quadrant feasible. Other AQAL elements require more time to analyze the data within the complete framework. Chapter 5 contains a discussion about the research limitations and recommendations for further studies that address the weaknesses (Cone & Foster, 2006; Creswell, 2013; Roberts, 2010).

**Delimitations**

The use of delimitations intentionally constrains the scope to ensure the problem is researchable (Bloomberg & Volpe, 2008; M. Simon, 2011). The study's first delimitation narrowed the scope to public administration. California state-level public administration organizations were the study's focus. Multiple public administration levels inform public perception about the organizations capacity to implement IT projects including international, federal, other states, and local municipalities. For instance, Los Angeles Unified School District $1 billion problematic iPad distribution program and the troubled federal $174 million Affordable Care Act website rollout were notable failures

outside of the State of California's jurisdiction (Chambers, 2014; Herold, 2014; Heusser, 2013; Newcombe, 2015; Yaraghi, 2015). The delimitation established the focus as public administration at the state level.

The second study delimitation was participants' roles within specific types of organizations. The study was specific to CIOs, AIOs, deputy directors, or project directors leading IT departments or directing large-scale IT projects within California public administration organizations. Other IT and non IT public administrators' experiences may provide useful insight. However, the anticipation was the selected CIO population stories would reveal more pertinent information about the broad internal organizational factors influencing IT projects outcomes. The delimitation decreased the possibility of conjecture from individuals with no experience or limited practical insight relative to the problem.

The third delimitation was the organizational IT services. All organizations have technology but some do not have IT departments that manage the hardware, software, or technological infrastructure. Instead, the organizations rely on statewide data centers or other organizations for service. The organizations participate in large-scale projects as stakeholders. Therefore, disqualified from the study were organizations that do not lead large-scale IT projects.

The fourth delimitation was the focus on the internal public administration culture and practice. Although not extensive, peer-reviewed studies and substantiated information exists concerning the external organizational factors illustrated in Figure 1 and discussed in the theoretical framework section. For the study, the research interest was the experiences that occur within organizations.

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**Summary**

Organizational change using large-scale IT projects is problematic (Bloch et al., 2012; Fulk et al., 2013, Hoque et al., 2006; McLaughlin, 2009; Sharma & Sharma, 2010). Stakeholder expectations no longer accept sustained IT project failures as the mere consequences of bureaucracy. Private sector organizational leaders face relentless pressure from marketplace competition and consumers to develop effective business strategies increasingly reliant on technology (Casasanto & Boroditsky, 2007; Karmakar & Kasturirangan, 2011; Tsoukas, 2006; Yukl, 2013). Public sector leaders have a similar challenge, albeit not from competitors but the public, regulated industries, and funding sources. Of immediate concern is the consistent implementation of relevant, timely, and cost-effective services no matter the organizational circumstances.

The interconnected economy, as demonstrated through the 2008 international financial crisis, made large-scale IT project outcomes more impactful. Global shifts in philosophical beliefs required changes to strategies that emphasized organizational health instead of steadfast adherence to bureaucratic traditions (Andrews & Boyne, 2010; Bansal, 2009; Hoque et al., 2006; Morgan, 2007; Tidd & Bessant, 2009). Leaders like CIOs need to develop organizational strategies that synergize complex factors including external opportunities and threats. Equally important, leaders must create and support reflective organizations that examine routinely internal strengths and weaknesses. Somewhere in the crosshairs is the State of California. On the one hand, the state's standing as a leading world economy infers a level of competence within the organizations that maintain the infrastructure. However, the continuing problems implementing large-scale IT projects tempers thoughts about operational competency.

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Therefore, the study's guiding ethos was Albert Einstein observation that the same level of thinking used to create problems cannot resolve them (Einstein, 1995, 2006; Isaacson, 2007). The sentiment explained the selected research qualitative narrative design and integrative AQAL theoretical framework. Data collected from CIOs first-hand accounts about internal organizational experiences was a departure from past public administration research. The oral histories examined CIOs' experiences using multiple internal dimensions to created a holistic awareness.

Finally, Einstein's thoughts foreshadowed the organization of Chapter 2 literature review. The analysis included private and public sector large-scale IT project research along with specific studies about interrelated topics like public administration nature, organizational management principles, leadership styles, change management processes, and technology strategies. The literature provided a general sense about the complexity effecting large-scale IT projects. However, the literature also demonstrated the lack of in-depth and integrated research that currently exists.

Chapter 2

Review of the Literature

The 35-year-old open secret within research is large-scale IT projects were difficult to implement for all business sectors and organizational types (Gauld, 2006; Goldfinch, 2007; Loukis & Charalabidis, 2011; Pawlowska, 2004; Willcocks & Margetts, 1993). Although relatively small in number, episodic studies increased during the 21st Century. The research described the general volatility without identifying specific root causes that sustained the problem. The concluding research refrain was data limitation existed and the problem required further study (Chua, 2009; Gauld, 2006; Goldfinch, 2007; Loukis & Charalabidis, 2011; Pan et al., 2008; Pawlowska, 2004; Yuttapongsontorn et al., 2008).

Failing or abandoned large-scale IT projects cost California approximately $3.7 billion since 2010 (Arns, 2013; Ortiz, 2015c). The purpose of this qualitative narrative study was to examine through the CIO perspective internal organizational factors that influenced large-scale IT projects using the California's statewide mandated frameworks to determine why IT projects failed or succeeded. Despite IT project failure ubiquitousness, the topic was an understudied phenomenon (Gauld, 2006; Goldfinch, 2007; Loukis & Charalabidis, 2011; Pawlowska, 2004; Zecheru, 2013).

The prima facie research was private sector case studies that generally examined people, process, technical, and external-related factors from a distance (Chua, 2009; Conboy, 2009; Goldfinch, 2007; Willcocks & Margetts, 1993). The more descriptive research was studies that focused on public administration nature, organizational management principles, leadership styles, change management processes, and technology

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strategies. Seldom were the theories or findings incorporated into IT project research to explain in-depth the identified risk factors, subject matter relationship, or extenuating complexity. Therefore, the IT project literature review and analysis included the interrelated topics not specific to IT projects.

**Title Searches, Articles, Research Documents, and Journals**

Literature reviews summarize and synthesize studies to support the purpose and research questions logic (Cone & Foster, 2006; Creswell, 2013; Roberts, 2010). Developing a literature review selection criteria relevant to the research purpose required a broader approach because of material limitations. A University of Phoenix library search using EBSCOhost, ProQuest, and Thompson Gale databases produced 184,265 scholarly reviewed articles using the phrase *public administration IT projects*. Even with the insertion of the words *failure* and *large-scale* the vast majority of articles scanned were not relevant. Included in the query results were numerous off-topic studies like the study of China's *Three Gorges Project, the largest water conservancy project in the world*, which did not discuss IT. In addition, resources such as Academia, Harvard Business Review, Integral World, Sage, and Wiley produced similar results.

The successful queries located 13 IT project studies with eight articles examining public sector project failure, two focused on private sector projects, and three studies featured both sectors. Further, of the 13 studies only four examined fully or partially United States IT projects. The predominant research design was qualitative case study conducted through a review of public documents.

In respect to the interrelated topics studies, the purpose statement assisted in identifying applicable research articles (Cone & Foster, 2006; Roberts, 2010; Rocco &

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Plakhotnik, 2009). The AQAL theoretical framework quadrants provided structure to
assess the literature relevancy within the context of the I, We, It, and Its quadrants
described in Chapter 1 (Küpers, 2009; Landrum & Gardner, 2005; Wilber, 2000a,
2000b). The University of Phoenix query returned over one million studies with the
words *public administration*, *organizational management*, *leadership*, *change
management, or technology*. In combination, the entire literature review keywords and
phrases are below.

- IT projects in public administration (large-scale)

- IT projects (large-scale)

- Public administration IT project failures (large-scale)

- IT project failures (large-scale)

- Project management in public administration

- Project management

- Change management in public administration

- Change management

- Leadership during change in public administration

- Leadership during change

- Public administration management

- Organizational management in public administration

- Organizational management

- Private and public sector managers' practices

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**Literature Review**

A summary of Willcocks and Margetts' (1993) risk management model begins the literature review. The model was the modern era's lens used to categorize IT project problems. Concepts introduced within the model threaded through the various studies. It was useful to review the literature using the framework because the risk management model influenced prior studies. The categories served as instruments to analyze and synthesize the studies. However, Willcocks and Margetts' model was not the theoretical foundation for conducting the study because it did not delve into the inner behavioral dimensions or relationship among the factors. AQAL was the means to examine in-depth the internal organizational factors. The quadrants afforded more latitude to analyze data and connect the multiple inner dimension.

The chapter's organization includes three review sections and a comprehensive analysis. Private sector large-scale IT projects was the first literature review section. The studies represent an accepted general premise within research about IT project risk factors. However, the studies' foci were a spectrum of research topics besides technology. Similarly, public administration large-scale IT projects was the second review section. Besides generalized factors, the studies identified risks affecting public administration projects. The third review section included interrelated research topics. The studies probed specific project issues found within the private and public sector research like leadership, change management process, and technology strategy. A synthesized analysis of the three sections completes the literature review.

**Risk Management Factors Model**

Willcocks and Margetts (1993) conducted a seminal study that categorized IT projects problems. Borne from a London-based multi-case study that reviewed public and private sector IT project artifacts, the findings established an order to think about the problem. Figure 3 illustrates the model that influenced subsequent research.
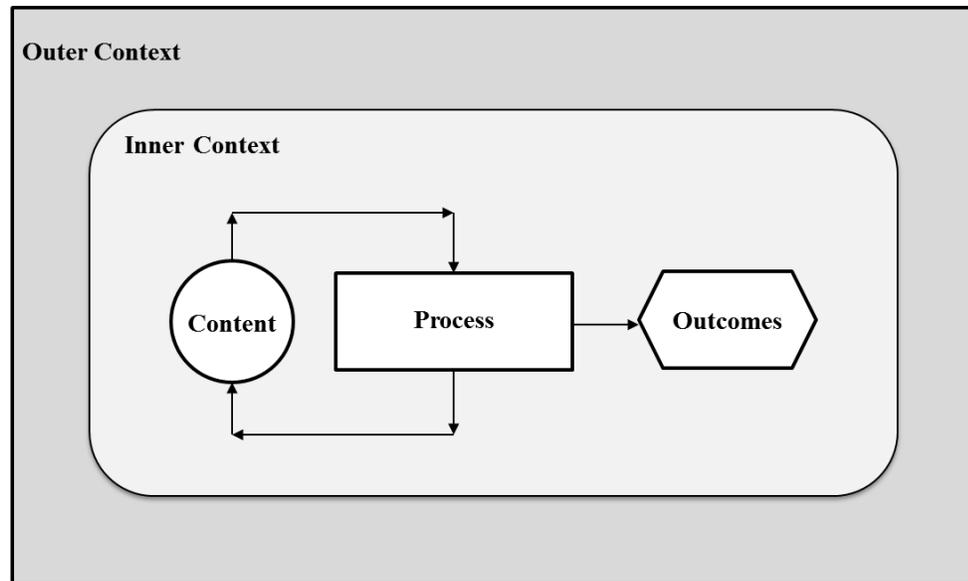


*Figure 3*. Risk management factors model. Figure illustrates the outer or external, inner or internal, content or project, process or procedural, and outcome risk categories.

**Outer context**. The risk category represents external factors defined by political, environmental, social, technical, and economic conditions (Casasanto & Boroditsky, 2007; Karmakar & Kasturirangan, 2011; Tsoukas, 2006; Willcocks & Margetts, 1993; Yukl, 2013). Willcocks and Margetts (1993) wrote the factors were uncontrollable from an organizational management perspective. Shifts in universal philosophies changed the outer context nature and importance. Depending on the organizational type, multiple levels of concerns like global, national, regional, and local required strategic consideration. Willcocks and Margetts (1993) advised organizational leaders to monitor continuously the outer context because it affected the inner context and content. Except

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for four studies by Chua (2009), Conboy (2003), Loukis and Charalabidis (2011), and Pawlowska (2004), the majority of IT project literature reviewed did not include extensive analysis of outer context risks factors. In combination, the additional research on public administration and leadership enriched awareness about the operational conditions within organizations that required an increase level of strategic and process agility (Bazigos et al., 2016; Nahavandi, 2012; Riccucci, 2010; Wilson, 2008).

**Inner context**. The inner context risks were within control of executives, managers, and staff because they reflected the cultural dynamics informed by beliefs, norms, and values according to Willcocks and Margetts (1993). Inner context components included strategies, structures, and practices. An integral aspect was individuals and groups alliances. External and internal relationships formed because of personal and social interests (Willcocks & Margetts, 1993). The IT project studies by Purao, Desouza, and Becker (2012) and Yuttapongsontorn, Desouza, and Braganza (2008) emphasized the importance and influence of stakeholder sentiment. Inclusion of organizational management scholarship furthered awareness about systems thinking, which supported transforming silos into systems. The interoperability defined sociotechnical organizations (Asif, Searcy, Zutshi, & Ahmed, 2011; Ghosh & Sahney, 2010; Herrmann, Loser, & Jahnke, 2007; Neyer, Bullinger, & Moeslein, 2009; van der Zwaan & de Vries, 2000).

**Content**. Willcocks and Margetts (1993) defined content risks as issues affecting the particular subject matter or project. Content risks arose because of local circumstances but were general by description wrote Willcocks and Margetts (1993). Problems associated with project leadership, strategic alignment, and technical feasibility

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was common. A necessary risk mitigation practice was developing substance intimacy during the analysis and planning phases. Willcocks and Margetts (1993) commented effective content risk management required leaders to consider a range of potential problems prior to initiating projects. Conboy's (2009) study about IT projects affect on budget management was a tangible example of content risks. Content literature like Istrate and Marian's (2012) study stressed the importance of understanding public administration organizational strengths and weaknesses. The research on technology strategy conveyed the importance of aligning business and IT management to achieve goals. Hallow's (2005) discourse about delivering function and value with IT projects underscored themes identified in the IT project studies.

**Process**. The third Willcocks and Margetts' (1993) category for analyzing large-scale IT projects implementation risks was processes. Institutionalized process steps undertaken to produce outcomes was the focus. The series of actions illustrated organizations' project implementation capability and capacity. Inherently, processes also reflected management and staff knowledge, skills, abilities, and discipline (Willcocks & Margetts, 1993). Several of the reviewed IT project studies including Gauld (2006), Lesca and Caron-Fasan (2008), and Loukis and Charalabidis (2011) identified multiple process risks. An enriched awareness developed from the literature on change management including Markus and Robey's (1988) study about information technology and organizational transformation.

**Outcomes**. Willcocks and Margetts (1993) wrote outcomes were either planned or unanticipated results. The risks affected organizations ability to derive benefits like cost savings, process time reduction, technology usefulness, operational improvements,

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and stakeholder value. Outcomes were specific to the content but also directly or indirectly dependent on systems comprised of the outer context, inner context, and process. The majority of IT project literature inferred the importance of performance outcomes but Conboy (2009) and Zecheru's (2013) studies discussed explicitly the relationship among the factors and outcomes. Literature on organizational management explained the dynamics for determining and measuring value for a diverse and changing stakeholder group (Senge, 1984, 1990, 1998; Tsoukas, 2006; Wang & Ahmed, 2003).

**Private Sector IT Projects Review**

Awareness about public administration IT projects risks developed from research about the private sector (Gauld, 2007; Loukis & Charalabidis, 2011; Willcocks & Margetts, 1993). The studies created a basis for examining the multiple factors (Gauld, 2007; Loukis & Charalabidis, 2011; Willcocks & Margetts, 1993). An early research belief about large-scale IT projects relegated risks to staffing and budget size, technological experience, and organizational structure (Birch & McEvoy, 1992; Cash, McFarlan, & McKenney, 1992; Parker, Benson, & Traitor, 1988; Willcocks & Margetts, 1993). Subsequent studies affirmed, added, or subtracted risk categories based on the research scenarios.

**Enterprise resource planning system case study**. Pan, Hackney, and Pan (2007) conducted "an interpretive structured-case method" to study a Singapore organization's enterprise resource planning (ERP) system implementation (p. 261). The iterative research design used literature, a field investigation, and interviews to collect data. A theoretical framework named process recursive interactive system model (PRISM) assisted in the analysis of reoccurring organizational factors affecting large-scale IT

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projects. Minus the stringent, statistical analysis of the comparable Pareto Analysis process, PRISM reduced the number of speculative factors found in literature. Remaining risks were the most plausible derived from observations and interviews. Data organization was similar to Willcocks and Margetts' (1993) risk management model. Pan et al. (2007) found external, internal, and content related issues during the ERP implementation. Namely, PRISM identified project strategic drift, an ineffective decision chain, and situational dynamics interfered with completion (Pan et al., 2007). The factors created a "mistake chain" (Pan et al., 2007, p. 266).

Pan et al. (2007) concluded the study with several behavioral recommendations to improve future outcomes. First, leaders should develop learning cultures that test assumptions about organizational readiness (Pan et al., 2007). Second, leaders should share responsibility for monitoring implementation activities with content or process owners (Pan et al., 2007). Third, organizational and project team decision-makers must heed warning signs instead of being dismissive or falsely reassured about individuals' heroic abilities (Pan et al., 2007). The study concluded with an affirmation about the relationship between preceding factors and outcomes.

**IT projects budgetary management case study**. Budget management was the focus of a case study by Conboy (2009) that examined four IT projects within an unidentified multinational financial services consulting organization. Through in-person interviews, the researchers investigated the role of fiscal control in reducing a business unit's large-scale IT project failures. Tight budgetary control meant a) no tolerance for project budget deviations, b) line item budget management, c) appropriate communications modes and frequency to provide status, and d) achievable budget plans

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(Conboy, 2009). However, Conboy (2009) found minimum evidence analysts performed the routine budget management functions when assigned to IT projects. Instead, opposite behavioral patterns existed. The perceived complexity of IT affected standard operating procedures within the budget department (Conboy, 2009).

Conboy (2009) identified the risk causes as business complexity, organizational and project culture, project resources responsibilities, and customer interests. First, business complexity influenced the content and vice versa. Conboy (2009) commented complications from large-scale projects developed from ambiguous requirements that were difficult to fiscally measure. Second, the organizational culture or inner context determined priorities. In this particular study, organizational leaders decided product quality was of greater importance than budget control. Third, Conboy (2009) found IT projects convoluted budget responsibilities. Budget controls existed within the organization. Resources possessed ample knowledge, skills, and abilities required for budget management. However, uncertainty about budget staff responsibilities on IT projects existed because of conflicting expectations at the functional and project levels. Fourth, IT project stakeholder interests albeit profits or service levels, determined ultimately the nature of budgetary control. Conboy (2009) concluded IT projects cultures imposed different budget management expectations that meant inconsistent practice rigor, process transparency, and IT staff participation.

**High profile international IT projects case study**. Chua (2009) studied eight IT projects within the private and public sectors to identify risk factors that caused failures. The majority of projects occurred within private sector organizations, hence the inclusion within this section. Chua's (2009) meta-case analysis selected well documented, diverse,

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and high profile IT projects from the United States, Australia, and Britain. Public documents like reports and memos were the data source.

Chua (2009) organized the findings into categories labeled people, process, technical, and extra-project oriented risk factors (see Table 1). The four people risk factors included inexperienced clients and vendors, lack of stakeholder participation, organizational managers' over-ambition, and end-user lack of familiarity with the resulting system (Chua, 2009). Process-oriented risks were uncertainty about scope or requirements, schedule, budget management, and change control. Chua (2009) found the technical risks factors reflected multiple issues like technological solution complexity, inappropriate project development approach, and insufficient testing. Finally, the external factors were uncontrollable environmental changes within the global economy or political arena. Chua (2009) also included within the category dependencies on other high profile projects. The research conclusion was compounding problems existed because of multiple organizational issues that directly and indirectly affected IT projects. The connection to other projects created perilous daisy chains that caused a domino-effect.

Table 1

*Risk Factors Orientations*

| People-Oriented | Process-Oriented | Technical-Oriented | External-Oriented |
|---|---|---|---|
| • Inexperienced clients and vendors<br>• Lack of stakeholder participation<br>• Over-ambition of managers<br>• End-users lack of familiarity with system | • Scope and requirements uncertainty<br>• Schedule<br>• Budget<br>• Change control | • System complexity<br>• Misalignment between strategic objective and project<br>• Insufficient system testing | • Global economy or politics<br>• Project dependencies |

*Note*. Derived from Chua's (2009) findings organized into four categories.

**Strategic scanning IT projects case study**. An array of risk factors emerged

from Lesca and Caron-Fasan's (2008) study of 39 French, Tunisian, Canadian,

Moroccan, and Brazilin strategic scanning or S.Scan IT projects. The sample population

included private and public sector organizations but the majority was the former. An

action research methodology enabled the identification of factors that caused project

failure and abandonment. The research design allowed researchers to participate in the

project intervention activities. Lesca and Caron-Fasan (2008) justified the approach by

stating in some organizations resistance existed toward external observers.

Consequentially, thorough and accurate collection of data required an insider role to

alleviate tensions. The researchers' established their presence by assisting with issue

identification and triaging troubled projects (Lesca & Caron-Fasan, 2008).

Lesca and Caron-Fasan (2008) organized the failure and abandonment issues into

separate categories. The distinction made between failure and abandonment was project

completion. Implementation of a troubled project was failure, whereas project

cancellation before implementation was abandonment (Lesca & Caron-Fasan, 2008). The

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problems occurred in both private and public sector organizations. First, the researchers

grouped into 12 meta-classifications 38 causal failures identified from a review of project

documents or observation. In no reflection of frequency or severity, Lesca and Caron-

Fasan (2008) listed the failure factors.

- No strong impetus to start project

- Inappropriate management involvement

- Unqualified project team leader

- Poorly defined expectations and objectives

- Deficient management by project manager

- Misalignment between the project and [organizational] strategy

- Weak stakeholder participation

- A hostile organizational culture

- An insufficient budget

- Searching for a technical solution to managerial problems

- Crisis management created by a previous project

- Underestimated project complexity (Lesca & Caron-Fasan, 2008, pp. 377-

  381)

Next, Lesca and Caron-Fasan (2008) reported organizational leaders abandoned

12 of the 39 projects. Although nine failure factors contributed to organizational leaders

cancelling the projects, several factors assuredly led to abandonment as shown in Table 2.

Lesca and Caron-Fasan (2008) concluded the three main reasons for abandonment were

a) a badly perceived third-party system facilitator entrance; b) the project sponsor left the

organization or received a new assignment, and c) misalignment between the IT project

and organizational strategic objectives (Lesca & Caron-Fasan, 2008).

Table 2

*S.Scan Projects Abandonment Factors*

| Risk Factors Indicating Strong Chance Project of Abandonment | Risk Factors that Lead to Definite Project Abandonment |
|---|---|
| • No strong impetus to start project | • No clearly identified project manager |
| • Inappropriate management involvement | • Almost exclusive implementation of technology is the objective |
| • Poorly defined expectations and objectives | • Management does not support the project |
| • Poor project management | • Project does not meet management expectations |
| • Misalignment between the project and [organizational] strategy | • No extremely urgent need of project to produce results |
| • Insufficient budget and does not permit the contracting of external expertise | • Stakeholders enthusiasm and support does not exist |
| • Project perceived as a technological solution versus a managerial matter | • Project team member not engaged |
| • Crisis management created by a previous project | • Change management occurs during project |
| • Underestimated project complexity | |

*Note*. Derived from Lesca and Caron-Fasan's (2008) findings about failure and
abandonment factors.

Therefore, collectively and in relation to Willcocks and Margetts' (1993) risk

management model, the 52 IT projects included within the reviewed private sector case

studies affirmed the utility of organizing issues by the outer context, inner context,

content, process, and outcome. Patterns emerged. Overlaid onto the risk factor model as

illustrated in Figure 4, the findings indicated considerable problems associated with the

inner context and content. Ill-defined organizational strategies along with persistent

business and IT management silos caused projects to drift according to Chua (2009),

Conboy (2009), Lesca and Caron-Fasan (2008), and Pan et al. (2007). Although the

research included mixed qualitative instrumentation like literature reviews, interviews,

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and observations, reasons for the sustained problem were not forthcoming. The outcome
led to recommendations for additional research by each author.
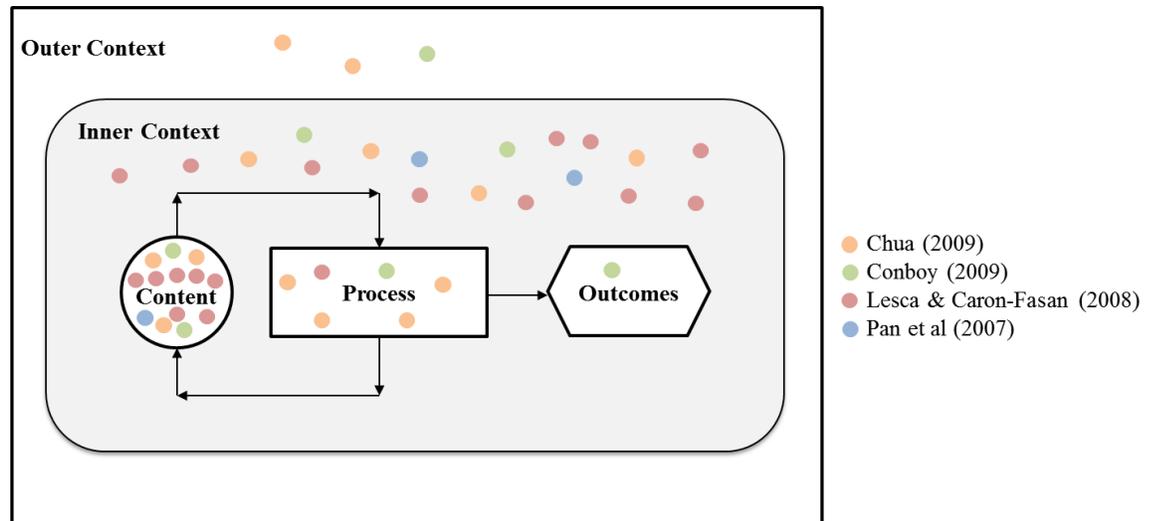


*Figure 4*. Private sector IT projects. Figure illustrates the risks identified in the literature
mapped to Willcocks and Margetts' model.

**Public Administration IT Projects**

The private sector review included some information about Australian, British,
and United States public sector IT projects (Chua, 2009; Lesca & Caron-Fasan, 2008).
However, this section contains a more comprehensive review of public administration
research. Several studies identified risk factors for large-scale public sector IT projects in
New Zealand, Romania, Greece, Poland, and the United States (Gauld, 2006; Goldfinch,
2007; Istrate & Marian, 2012; Loukis & Charalabidis, 2011; Pawlowska, 2004; Purao et
al., 2012; Yuttapongsontorn et al., 2008; Zecheru, 2013). The research designs were
mostly qualitative case studies that examined public documents. Similar external and
internal factors found within the private sector review were relevant. The affected
Willcocks and Margetts' (1993) categories were the outer context, inner context, content,
process, and outcome.

**New Zealand public sector enthusiasm case study**. In a study on New Zealand public sector failures, Goldfinch's (2007) qualitative study reviewed research theories and public documents to identify flaws within several complex projects. Goldfinch (2007) questioned IT as a strategic option. A summary of the failures grouped the problems into three categories. Project or content related problems were the result of unmet standards, budgets, and schedules (Goldfinch, 2007). System, inner content, or process related problems were the direct results of technical issues associated with the technical architecture, misalignment with customer needs, underachieving system performance (Goldfinch, 2007). Lastly, user or inner content related failures forced system abandonment because (a) the developed system was too complex, (b) sufficient training was not provided, or (c) users resisted changing from the status quo (Goldfinch, 2007).

Goldfinch (2007) expressed concern about previous research insufficiency, which tended to reflect "management fads" that led to quick abandonment of solutions for newer ones (p. 919). In Goldfinch's (2007) assessment, the various methods for identifying risks provided no guarantees about value-added outcomes because of inextricable problems. Unlike private sector researchers who steadfastly supported the use of technology, Goldfinch (2007) recommended public administration leaders adopt a pessimistic outlook about IT as a viable strategic option. Instead, Goldfinch (2007) opined that a rational decision-making approach should include measured beliefs about outcomes. In conclusion, Goldfinch (2007) counseled leaders about making organizational decisions. The first imparted advice was if projects were necessary, then the investment in proven technology solutions was the only plausible option. Second, to

improve outcomes, leaders should organize change activities into separate tasks instead of massive projects. Goldfinch's (2007) final advice was decision-makers should approve only IT projects with short development timeframes.

**New Zealand public hospital case study**. Gauld's (2006) case study of a New Zealand public hospital used private sector research findings about large-scale IT project failures as a comparative basis. The researcher wrote generalized factors like environmental conditions, planning, technical, resources, and management were insufficient (Gauld, 2006). Instead, inner context and content data about specific issues provided tangible information about failures. Questions about organizational readiness on multiple levels emerged from the study. Gauld (2006) identified several factors that contributed to the IT project system failure including (a) the lack of in-depth analysis, (b) leadership absence at the CIO level because of chronic position vacancy, and (c) inconsistent decision-making and oversight board. In addition, the study found an inability to follow contract and procurement processes.

Gauld (2006) concluded that a fundamental flaw was failure to ask relevant questions about the strategic alignment, resource allocation, or value. On the contrary, leaders and project teams tended to avoid considering or discussing whether the IT projects were manageable. Recognizing the research limitation of using one case study, Gauld (2006) ended the study by asserting, "…there is no formulaic way of addressing… issues" (p. 111).

**Greek e-government case study**. Greek public sector e-Government projects were the research focus of Loukis and Charalabidis' (2011) case study. The researchers analyzed 80 decisions by the governing board responsible for approving and overseeing

IT projects. In follow-up interviews with the group members using a Delphi survey technique, the researchers identified 21 IT project risk factors listed in Table 3. Similar to other studies, IT and non-IT risks were evident. The leading failure causes were the inner context, content, and process, which aligned with Willcocks and Margetts (1993). Loukis and Charalabidis' (2011) study was one of the few that specifically assessed outer context or external factors. Public administration organizations had political and regulatory extenuating factors that affected large-scale IT projects (Loukis & Charalabidis, 2011). Centralized policies restricted the search for appropriate solutions. Further, systemic bureaucracy created a "higher resistance" to process changes associated with IT projects according to Loukis and Charalabidis (2011).

Loukis and Charalabidis (2011) concluded the study with several recommendations for public administrators including the development of highly skilled technologists. Other advice concentrated on changes to the inner context. For instance, leaders should redesign organizational structures by eliminating process silos and unfreezing incongruous cultures to improve cooperation among groups. Finally, a harbinger to successful IT project outcomes was a learning culture. Loukis and Charalabidis (2011) wrote leaders should cultivate organizational knowledge to influence large-scale projects successful outcomes.

Table 3

*Greek E-government Risk Factors*

| Outer Context | Inner Context | Content | Process |
|---|---|---|---|
| • Organizational changes due to legal requirements | • Insufficient technology staff | • Incomplete, problematic, or vague project implementation plan | • Incomplete, problematic, or vague RFP contract |
| | • No strategic goals to exploit technology outside of organization | • Problematic and vague project objective | • Problematic or obsolete technical specifications |
| | • No strategic goals to exploit technology or data with other public sector organizations | • Inappropriate project team or insufficient users' involvement | • Lack of interoperability between existing and planned technology |
| | • Insufficient training of technology staff | • Very high project cost | • Lack of processes & structural redesign along with a lack of change management |
| | • Lack of clear organizational and technology strategies to align project | • Many dissimilar technologies incorporated into the solution design | • Inadequate maintenance and support of technology after implementation |
| | | • Low emphasis on technology security | • No software source code ownership rights provisions |
| | | | • Lack of critical personal data protection |
| | | | • Technical networks with low performance and/or very high operating costs |
| | | | • Insufficient space for the technology installation |

*Note*. Derived from Loukis and Charalabidis' (2011) findings about e-government risk factors.

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**Poland e-government case study**. Pawlowska's (2004) case study of four Poland e-government technology projects aligned with research about large-scale project challenges within bureaucratic organizations. The analysis compared Poland's problems with an Organisation [sic] for Economic Co-operation Development (OECD) report about e-government international threats. Chief among Pawlowska's (2004) findings was the influence of organizational perspectives and political decision-making. Controllable and uncontrollable factors coexisted. The external uncontrollable factors included changing laws or regulations that did not provide appropriate timeframes or budgets to implement IT projects successfully.

The internal controllable factors included lack of resource expertise and failed collaboration with external organizations. In addition, Pawlowska (2004) wrote an underestimation about each engagement scale and uniqueness was evident, which routinely forced organizations to implement projects without thorough assessments. Pawlowska (2004) discovered Polish public administrators did not possess the necessary expertise and tended to reject recommendations that did not align with their worldviews. Finally, strained relations between organizations and business partners existed because public administrators failed to specify objectives but expected "too much," which in some instances produced unfavorable contractual arrangements (Pawlowska, 2004, p. 177). The study concluded with Pawlowska's (2004) observation that ostensibly, larger public administration IT projects required more control by executives because of uncontrollable and controllable variables, which introduced or increased the spectrum of politics.

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**Romania IT projects case study**. A case study about Romania's IT projects fiscal management capability generated recommendations to link project performance, organizational accountability, and financial incentives or de-incentives (Zecheru, 2013). In a review of European public administration projects, the study used budget reports to ascertain previous fiscal actions shortcomings. Project leaders' decisions were central to identifying and managing risks. Zecheru (2013) wrote financial risk prevention and remediation required a thorough assessment of external threats and internal weaknesses, which aligned with Willcocks and Margetts' (1993) outer and inner context categories.

In the conclusion, Zecheru (2013) recommended several actions. Of immediate concern was managing people-oriented risks. Zecheru (2013) tasked leaders to clarify roles and performance expectations regarding risk identification and monitoring. Process-oriented recommendations were numerous. First, Zecheru (2013) wrote maturing financial management processes and developing accounting procedures was paramount. Specific tasks included incorporating external regulations and laws into practices. Also of importance was maintaining updated ledgers. Second, Zecheru (2013) implored leaders to develop organizational cultures that valued open discussions, unfettered project teams, and functional discipline that included monitoring and appropriate documentation.

**Romania organizational culture change during project implementation**. Istrate and Marian's (2012) research focused on the project management culture within several Romanian public administration organizations. The study's purpose was to assess organizational environments for implementing projects. After a literature review used to contextualize the eventual findings, the researchers collected survey from 80 participants and conducted follow-interviews for a select few respondents. Of the four hypotheses,

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only the theory that organizational implementation success was contingent upon the existence of internal competency was verified (Istrate & Marian, 2012). Investment in primary and collateral human resources was an imperative wrote Istrate and Marian (2012). Absent of this internal capacity and capability, organizations would continue to experience project challenges. The unverifiable hypotheses sought to examine the most frequent project types, importance of team spirit, and criticality of organizational knowledge.

Istrate and Marian (2012) concluded the study by observing Romanian public administrators valued process rigor over inventiveness. However, a contradiction existed. Relatively few professionally trained project managers were available according to Istrate and Marian (2012). Further, research participants indicated only 50% of the organizations had sufficient policies and processes to guide projects (Istrate & Marian, 2012).

**United States Internal Revenue Services case study**. A case study on the United States' Internal Revenue Services' Business Systems Modernization (BSM) IT project focused on stakeholder management. The archaeological research used 241 stakeholder's public documents that captured sentiments about the BSM project. Researchers determined stakeholder concern about power and structural balance was the cause of the approximately 10-year and $3 billion project delay (as cited in Purao et al., 2012; Markus & Robey, 1988). Self-interest influenced acceptance or resistance to change. Purao et al. (2012) concluded the external contractor failed to create a collaborative project environment inclusive and respectful of the various stakeholders.

Purao et al. (2012) identified also communication issues. First, the real-time project management practices did not permit in-the-moment discussion about the

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development process because of stakeholders' geographical dispersion. Instead, the

project team relied on project status reports that did not convey stakeholders' sentiment.

Routinely, concerns went undetected or unrecorded. Second, during the occasional

meeting groupthink, posturing, or individual game playing occurred. Purao et al. (2012)

suggested hidden psychological factors determined the degree by which stakeholders felt

safe or secure to share opinions different from executives.

The study resulted in a Purao et al. (2012) imperative about the importance of

stakeholder perspectives and need for sophisticated implementation techniques. Large-

scale projects affect multiple environments with different cultures and strategic

objectives. Accordingly, the IT project must satisfy diverse interests. Purao et al. (2012)

recommended a holistic ecosystem outlook but cautioned leaders about the difficulty in

implementing the concept. Success was incumbent on two imperatives. First, instead of

monolithic approaches leaders must encourage use of various techniques like stakeholder

sentiment analysis. Second, the identification of social networks was essential concluded

Purao et al. (2012).

**Seattle, Washington monorail project case study**. Yuttapongsontorn's et al.

(2008) forensic case study on Washington State's Seattle Monorail Project (SMP) used

published documents and related websites to examine the importance stakeholder

management. The large-scale project had many groups with unique perspectives and

needs. These differences gave rise to tension requiring leadership mediation. Through the

application of private sector stakeholder theory, the researchers performed a post-

examination to understand the different groups' interests, power, and expectations

(Yuttapongsontorn et al., 2008). Besides customers and shareholders, the researchers

asserted project leaders must integrate a boarder range of individuals, groups, and stakeholders. Yuttapongsontorn et al. (2008) identified no less than 11 SMP stakeholder groups that included politicians, potential passengers and Seattle citizens, SMP board and staff, pro and anti-SMP activists, contractors, and the media. The three main research findings determined success depended on (a) monitoring and evaluating stakeholder interactions, (b) improving the ability to manage stakeholder expectations and interests, and (c) detecting and then defining stakeholders' "power over their strategic objectives" (Yuttapongsontorn et al., 2008, p. 473).

In the concluding remarks about why large-scale IT projects fail, Yuttapongsontorn et al. (2008) reiterated the importance of stakeholder management. Stakeholders were not the same but represented a range of expectations. Traditionally, stakeholder management entailed considering "…interests, outcomes, and stake in relation to an organization" (Yuttapongsontorn et al., 2008, p. 474). On this point, the study did not discover new insight. However, the formative information was the organizational need to perform reverse analysis to understand how stakeholders' interests reflect organizational strategy wrote Yuttapongsontorn et al. (2008).

Therefore, the wide-range research on public administration IT projects led to mostly similar findings identified in the private sector case studies (Gauld, 2006; Goldfinch, 2007; Istrate & Marian, 2012; Loukis & Charalabidis, 2011; Pawlowska, 2004; Purao et al., 2012; Yuttapongsontorn, 2008; Zecheru, 2013). The one difference was the degree by which politics and regulations affect IT projects. The studies documented problems emanating from all risk categories as defined by Willcocks and

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Margetts (1993). Issues within the inner context, content, and process areas were the most frequent. Figure 5 maps the findings.

The IT project studies also revealed information about problems unique to public administration organizations. Unlike their private sector counterparts, leaders endured systemic problems with politics, stakeholders, immature processes, and strategic conflict between business and IT visions according to Pawlowska (2004), Purao et al. (2012), Istrate and Marian (2012), Yuttapongsontorn et al. (2008), and Zecheru's (2013) findings. Silos and immature processes permeated bureaucratic structures. Professional resource development was latent. Lastly, political interests had a greater influence on strategic decisions than economic or technological concerns.
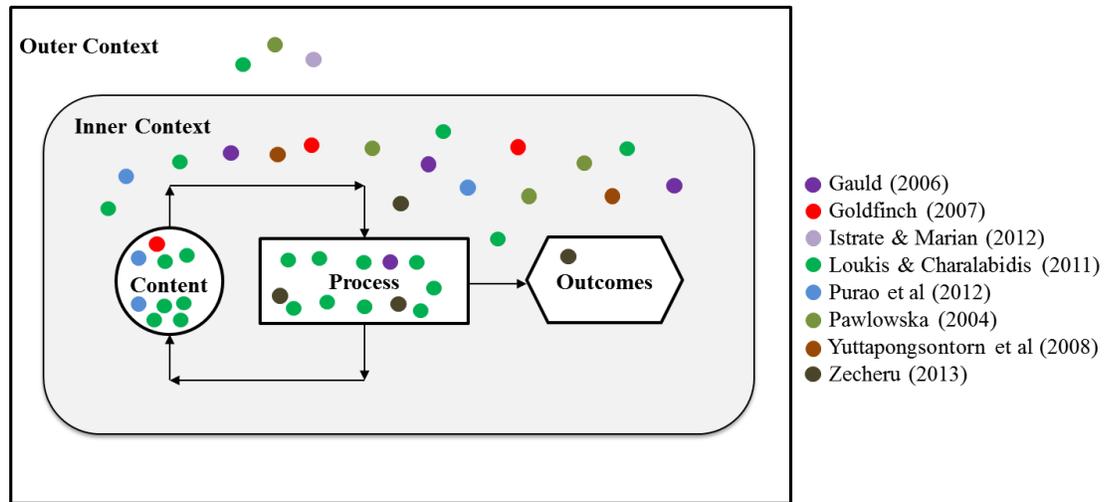


*Figure 5*. Public sector IT projects. Figure illustrate the risks identified in the literature mapped to Willcocks and Margetts' model.

A summary of the private and public sector literature review within the context of Willcocks and Margetts' (1993) risk factor model is presented in Table 4. Multilayered problems affecting organizations existed. First, the public administration bureaucratic structure created a formable challenge because of its steadfastly fixed nature (Istrate & Marian, 2012; Loukis & Charalabidis, 2011; Purao et al., 2012). Second, shifts in

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external paradigms introduced or acerbated organizational management complexity (Conboy, 2009; Gauld, 2006; Goldfinch, 2007; Lesca & Caron-Fasan, 2008; Loukis & Charalabidis, 2011; Pan et al., 2007; Pawlowska, 2004; Yuttapongsontorn et al., 2008; Zecheru, 2013). Third, leadership mattered, especially when a conflict or decision void existed (Chua, 2009; Conboy, 2009; Gauld, 2006; Lesca & Caron-Fasan, 2008; Yuttapongsontorn et al., 2008; Zecheru, 2013). Fourth, the importance of change management process was undervalued (Chua, 2009; Lesca & Caron-Fasan, 2008; Istrate & Marian, 2012; Loukis & Charalabidis, 2011; Pawlowska, 2004; Purao et al., 2012; Yuttapongsontorn et al., 2008; Zecheru, 2013). Finally, the relationship between business and IT strategy was problematic (Chua, 2007; Conboy, 2009; Goldfinch, 2007; Lesca & Caron-Fasan, 2008). The review of additional specific research about the aforementioned factors follows.

Table 4

*Reviewed Literature Summarized Risks*

| Risk Factor Categories | Private Sector | Public Sector |
|---|---|---|
| Outer Context | 3 | 2 |
| Inner Context | 18 | 18 |
| Content | 13 | 9 |
| Process | 6 | 12 |
| Outcome | 1 | 1 |

*Note*. Derived from the private and public sector literature cited causes for IT project risks (Chua, 2009; Conboy, 2009; Gauld, 2006; Goldfinch, 2007; Istrate & Marian, 2012; Lesca & Caron-Fasan, 2008; Loukis & Charalabidis, 2011; Pan et al., 2007; Pawlowska, 2004; Purao et al., 2012; Willcocks & Margetts, 1993; Yuttapongsontorn et al., 2008; Zecheru, 2013).

**Interrelated Topics Literature Review**

The previous sections provided a general sense of why large-scale IT projects failed (Chua, 2009; Gauld, 2006; Goldfinch, 2007; Loukis & Charalabidis, 2011;

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Willcocks & Margetts, 1993). Projects encountered problems with the outer context, inner context, content, process, and outcomes. The risks included political, structural, and process-related issues. However, the root causes for the sustained problems remained unaccounted. This section reviews benchmarked literature to develop further insight into the complex problem. According to theorists like H. Simon (2000), Morgan (2007), Wilber (2000a, 2000b), and Willcocks and Margetts (1993), an enriched awareness about the problem develops from a multilayered research approach. Accordingly, and within the context of large-scale IT project problems, this section examined public administration nature, organizational management principles, leadership style, change management process, and technology strategy.

**Public administration nature**. Based on the private and public sector literature, the inner context contained many IT project risks (Chua, 2009; Conboy, 2009; Gauld, 2006; Goldfinch, 2007; Istrate & Marian, 2012; Lesca & Caron-Fasan, 2008; Loukis & Charalabidis, 2011; Pan et al., 2007; Pawlowska, 2004; Purao et al., 2012; Willcocks & Margetts, 1993; Yuttapongsontorn et al., 2008; Zecheru, 2013). Specific public sector findings listed politics, strategic purpose uncertainty, and structural rigidity as risks affecting IT project implementation. The research on public administration nature provided further insight about the organizational dynamics.

The historical accounts of H. Simon (2000), Riccucci (2010), Waldo (1948), and Wilson (2008) stated public administration nature took form with the establishment of Max Weber's bureaucratic theory. Information obtained from the qualitative studies resulted from literature reviews, observations, and interviews. The studies' central theme developed awareness about administrative behavior.

H. Simon's (2000) study first published in 1947 sought to explain the decision and management processes that defined the organizational nature. Purposeful administrative actions whether making decisions or performing tasks were the sole and grounding features of organizations. In the later twentieth century, H. Simon updated the study by integrating the subject of technology (H. Simon, 2000). Although the process-oriented administrative practices remained the central theme, the study update recognized the influence of technology on organizational strategies and operations.

Waldo's (1948) published dissertation countered H. Simon's pragmatism with the argument public administration issues were those related to the question what should be done in the democratic context. In Waldo's estimation, the role of public administration extended beyond executing policy through a value-neutral orthodoxy. The development of knowledge and value was through the evolving philosophical tenets of ontology and epistemology. Waldo (1948) argued adaption to reflect the philosophical changes was necessary to maintain relevancy.

The purpose of Riccucci's (2010) research was to collect empirical data about public administration purpose. Straddling the theoretical positions of H. Simon and Waldo, the research interest was in the "…logic of inquiry and philosophy…" (Riccucci, 2010, p. 23). The study outcome revived the legendary debate between Waldo and H. Simon regarding the science and art of public administration (Harmon, 1989). Participating in the discussion were contemporary researchers including Bozeman and Rainey (1998), Pitts and Fernandez (2009), Raadschelders (2011), Raadschelders and Lee (2011), Rainey (2012), and Rishel (2011). Wilson's (2008) research contribution used 1960s data collected from United States federal employees to study public administration.

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The research instrument included a Thematic Appreciation Test using commonplace office scenes for which interviewees developed a story about operational practices that supported both H. Simon and Waldo's theoretical positions.

*Public administration development history*. Weber's bureaucratic model has endured for approximately 110 years despite global shifts in organizational management principles wrote H. Simon, (2000), Riccucci (2010), and Wilson (2008). Fomented in the austere puritanical modern era, the model emerged from a socially accepted belief in objective truth (Cooper, 1999; Moser & vander Nat, 2003; R. Feldman, 2003). Knowledge was basic. Organizational strategies and resource use derived from a rationalized proposition that internal standards and uniformity were necessary to achieve objectives (Cooper, 1999; Gulick & Urwick, 1937; M. Feldman, 2000; Moser & vander Nat, 2003).

Frederick Taylor's scientific management theory and Henri Fayol's management principles along with Gulick and Urwick's science of administration institutionalized complex roles and rules (Johnson & Duberley, 2000; Jones, 2010; McLean, 2011; Parker & Ritson, 2005; Riccucci, 2010; Spatig, 2007; Taylor, 1911; Wren, Bedeian, & Breeze, 2002). H. Simon's (2000) research emphasized the influence of organizational structure in determining public administration nature. A logical orthodoxy resulted. Predominantly governed by authoritarian behavior, a derivative of the culture was alienation and mechanization (Bartels, 2009; Jones, 2010; Leonina-Emilia, 2010; Stout, 2012). H. Simon (2000) stated achieving goals and objectives was the organizational purpose. Thus, identifying behavioral patterns in the pursuit of "…getting things done…" served as the criterion for describing bureaucracies (H. Simon, 2000, p. 3).

A "hierarchy of decisions" along with what H. Simon (2000) described as "the relative element in a decision" was the definitive aspects (p. 4-5). The hierarchy of decisions meant workers implemented tasks based on vertical decisions made by various management levels. The decisions may have been asymmetrical and caused conflict. Each manager determined rational actions at his or her level, which required subsequent decision makers to accept, ignore, or do something different. Organizations achieved goals through the deliberate and conscious or unconscious behavior. Leaders arrived at a decision by segregating relative elements that established or supported specialized processes. Ultimately, organizational actions were a compromise wrote H. Simon (2000). The pragmatic belief in bureaucratic efficiencies was H. Simon legacy.

Waldo countered H. Simon's thesis. The philosophical ideology of Waldo's (1948) published dissertation concerned what should occur within organizations instead of what administrators do. Conflicting social beliefs positioned public administration as a managerial, political, or legal means to manage organizations. The managerial approach championed public administration as a business. Organizational management theory supported a rational bureaucratic model. The political approach developed from the belief of social pluralism. Waldo (1948) wrote organizations were a reflection of evolving and expanding public values and perspectives that required adjustments to internal practices. The legal approach focused on jurisdictional, administrative, and constitutional law. This perspective limited public administrators' responsibilities to ethics (Waldo, 1948). Governed by empowered judges, the tenets were equity, individual rights, and procedural due process.

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The political approach reflected Waldo's philosophy. External environmental changes altered the meaning of public administration. The circumstances required practice realignment with evolving democratic principles according to Waldo (1948). The purpose of public administration was as a nonprofit public service and not as a business. Waldo (1948) explained the pursuit of bureaucratic efficiency based on private sector standards ignored public administration democratic relevancy.

The exploration of public administration knowledge development within Riccucci's (2010) qualitative analysis asked three questions. First, what was public administration circumstances? Riccucci (2010) stated the phenomenon was not objective but based on social, political, and gendered constructs. Second, Riccucci asked what was knowable about public administration. Knowledge limitations existed Riccucci (2010) explained. Public administrators' experiences and practices were subjective. Further, public administration scholarship reflected specific relationships among the topic, researcher, and participants. The variances in studies marginalized the utility of Kuhn's (1996) normal science. Instead, Riccucci (2010) wrote multiple lenses were the most viable means to understand public administration nature. The third question pondered what was an executable process for knowing about public administration. Riccucci (2010) reasoned any methodology adopted to act was plausible because of the dynamism found within the previous questions.

Wilson (2008) wrote that within bureaucracies, participants were attentive to "following the right rule" more so than achieving the goals (p. 69). Therefore, the resulting culture meant leaders' exerted control over internal conditions that fixed future needs to past practices. However, Wilson (2008) acknowledged in his discourse that

changes in philosophical beliefs challenged the ability to create a consensus about public administration nature. Despite interest in empirical evidence derived from scientific research, Wilson (2008) recognized public administration practice was not the rigorous science as envisioned by Taylor, Fayol, Gulick and Urwick, and H. Simon. As a practice versus a theoretical construct, the bureaucratic model helped organizational leaders manage uncertainty during a particular time and place. "Patterned way[s] of thinking" afforded public administrators the mechanism to transform political ideals into actions according Wilson (2008, p. 91). However, a dilemma existed. Wilson (2008) explained that most organizations had multiple cultures. The organization reflected pendulum shifts in elected officials political interests and the subjective self-interests of individuals and groups. The dynamism meant circumstances, individual predispositions, and structure influenced the organizational nature that was unmanageable unless science-based efficiencies coexisted (Wilson, 2008).

As a result, a consensus about public administration nature does not exist (Andersen, 2010; Ospina & Dodge, 2005; Pandey & Rainey, 2006; Riccucci, 2010; Shapiro & Rynes, 2005). External philosophical shifts influenced how scholars researched public administration nature but the bureaucratic structure remained the definitive explanation about decision making and practices (Rainey, 2012; Riccucci, 2010; Rishel, 2011; Stout, 2012). Consequentially, a duality existed. The loss of confidence with the bureaucratic status quo generated interest in new organizational designs while retaining the previous construct.

*The public administration model change dilemma*. A supporter of the bureaucratic theory, Udy (1959) attempted to resolve the incongruity between H. Simon

and Waldo's visions. Transformation could occur through two change processes Udy (1959) theorized. The first option had two outcomes. First, scholars could redesign the bureaucratic model to incorporate the changing conditions. The second outcome retained the bureaucratic model as conceived but with an explanation concerning the exclusion of emerging conditions.

The second option was a concession to critics of the first option wrote Udy (1959). Distractors bristled at the either-or option. Instead, a preference was to have multiple choices. Accordingly, Udy (1959) proposed the original bureaucratic theory as the formal approach. Subsequent theories such as Taylor's scientific management or Waldo's public management were informal or unofficial (Udy, 1959; Waldo, 1948). However, critics responded the informal and unofficial terms were misleading because of three propositions (Udy, 1959). The first lament was organizations operated at a level predetermined by the technical nature of tasks (Gulick & Urwick, 1937; H. Simon, 2000; Udy, 1959). The legitimacy of the task to fulfill necessary organizational objectives meant the activities were formal or official. Second, "bureaucracy and rationality were mutually inconsistent within the same formal organization" (Udy, 1959, p. 794). Therefore, the propositions could not coexist as proposed within newer models. Third, if organizations adopted informal or unofficial models, deficiencies would emerge and require bureaucratic practices restoration to improve efficiency. Subsequent public administration researchers encountered similar problems attempting to identify a relevant model (Andersen, 2010; Kaufman, 2007; Raadschelders, 2011; Raadschelders & Lee, 2011; Rainey, 2012).

Therefore, ambiguity and uncertainty continued to shroud public administration (Abramson et al., 2007; Barcan, 2010; Boin & Hart, 2003; French, Spears, & Stanley, 2005; Kapucu, 2012; Kim & Vandenabeele, 2010; Ospina & Dodge, 2005; Shapiro & Rynes, 2005; Uchem & Erunke, 2013). Through logical deduction of the IT project and interrelated literature, the political, strategic, and structural risks were as much a byproduct of public administration nature as the general problem implementing large-scale projects. The conceptual direction in the past 20 years emphasized the need to balance theory and practice with external conditions (Ayande et al., 2012; Bogason, 2001; Burnier, 2005; Gibson & Deadrick, 2010). Public administration theoretical change accounted for human relationships with multi-dimensional factors like technology that affected organizational outcomes. Stout (2012), Thacher and Rein (2004), and Wilson (2008) reasoned the organic shifts established new organizational norms because they integrated inherent and transcendent factors. Thus, public administration nature meant, in theory, inclusion of multiple and evolving perspectives while management practices continued within the de facto bureaucratic construct.

**Organizational management principles**. The private and public sector research on large-scale IT projects found internal cultural and structural problems interfered with project implementation (Chua, 2009; Conboy, 2009; Gauld, 2006; Goldfinch, 2007; Istrate & Marian, 2012; Lesca & Caron-Fasan, 2008; Loukis & Charalabidis, 2011; Pan et al., 2007; Pawlowska, 2004; Purao et al., 2012; Willcocks & Margetts, 1993; Yuttapongsontorn et al., 2008; Zecheru, 2013). The studies identified the persistence of organizational silos as a contributing risk factor. Literature on organizational management indicated external and internal isolation hindered the development of

innovative strategies and practices. In contrast, the emerging management model was a sociotechnical system that integrated multiple organizational, leadership, and technology features.

The chief means to accomplish sociotechnical objectives was transforming bureaucracies wrote Asif, Searcy, Zutshi, and Ahmed (2011), Ghosh and Sahney (2010), Herrmann, Loser, and Jahnke (2007), Neyer, Bullinger, and Moeslein (2009), and van der Zwaan and de Vries (2000). The "…structural evolution…" meant team-based organizations using flat designs as opposed to vertical hierarchies (Wang & Ahmed, 2003, p. 55). In addition, structural changes included implementing boundaryless concepts to decentralize power, nurture informal cultures, and encourage cross-functional collaboration that permitted fluid exchange of ideas (Ashkenas et al., 2002; Balogun et al., 2005; Collins, 2001; Hoque, 2011).

Wang and Ahmed's (2003) qualitative study focused on organizational structure and knowledge management. The authors' found that on occasion, where multinational organizations or cross-functional team required greater resource pool, leaders deployed matrix structures. Matrices were beneficial and problematic (Wang & Ahmed, 2003). The benefits included flexible and adjustable designs to accommodate circumstances. Within the evolving organizational construct, project managers were equal to functional managers wrote Wang and Ahmed (2003). The change afforded organizations the ability to achieve both content and process-oriented objectives. However, tensions developed because of inherent uncertainties about content and process owners' responsibilities, accountability, and control. The resulting circumstances resulted in low morale wrote Wang and Ahmed (2003).

*Sociotechnical systems process orientation led by knowledge workers*. In response to the ensuing chaos were organizational designs classified as process-oriented (Wang & Ahmed, 2003). The various titles included network, knowledge base, and virtual structures. Wang and Ahmed (2003) wrote the lateral designs furthered the movement away from vertical control, power, and authority to engaging what Drucker (1999, 2002) defined as a class of knowledge workers. Also described as the communities of excellence or practice, the design enabled organizations to manage knowledge and adapt quickly to external risk factors and changes. Besides the benefits of flat and matrix designs, the communities addressed the previous designed deficiencies explained Wang and Ahmed (2003). First, market trends facilitated reconstruction into collaborative communities. Second, the communities buttressed a sense of individual and group identity, ownership, and accountability that created organizational stability without freezing cultures. Third, the communities identified essential knowledge networks that enabled dialogue and information exchanges. Wang and Ahmed (2003) surmised that the four organizational dimensions of hierarchy, functions, relationships, and power and control were insufficient to build modern organizations. Relevant organizations also needed trust-based relationships, interactive and externally oriented relationships, and emotionally inclusive relationships to thrive (Wang & Ahmed, 2003).

*Sociotechnical systems thinking approach.* Systems thinking research further explained the process for dissolving silos into organizational learning cultures (Maon, Lindgreen, & Swaen, 2008; Meadows, 2008; Senge, Kleiner, Roberts, Ross, Roth, & Smith, 1999). Meadows (2008) wrote systems were elements coherently connected to achieve objectives. Awareness about the layered elements was only the start. An essential

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knowledge development activity was awareness about the linguistic connectors like *and* explained Meadows (2008). The use of conjunctions might change meaning based on circumstances. Thus, systems were also self-organizing. Meadows (2008) equated the evolutionary process as a resilient response to nonlinear conditions. Senge's (1984, 1990, 1998) studies described the process as a "quiet revolution" that integrated multiple worldviews into organizations by piercing great man illusions (1984, p. 84). Belief in heroic figures receded as Waldo's (1948) described social pluralism increased. Transformation indicators included organizational interest in long-term strategies and decentralized decision-making according to Senge (1984).

   ***Sociotechnical systems temporal and geographical operation***. Organizational management within a global economy entailed navigating the distortion of time and space (Casasanto & Boroditsky, 2007; Karmakar & Kasturirangan, 2011; Mayer et al., 2012; Rosenau & Linder, 2003). Tsoukas (2006) wrote circumstances made necessary a continuous and decentralized strategy across geographic regions to improve service delivery. Although financially rewarding, a global strategy also posed problems. Imbedded were high-risks associated with radical change that required action (Helms & Nixon, 2010; Hoque et al., 2006; Shane, 2009; Upton, Doherty, Gleeson, & Sheridan, 2010). Upton, Doherty, Gleason, and Sheridan (2010) found the rapid pace of the business environment did not always afford organizational decision-makers the time to perform in depth analysis about unknown situations. Instead, the use of knowledge workers from diverse backgrounds expanded organizational knowledge (Drucker, 1999, 2002; Stevens, Plaut, & Sanchez-Burks, 2008; Wienclaw, 2010).

*Sociotechnical systems thought diversity*. Developing a global perspective necessitated sensitivity to experiences, customs, cultures, and belief systems that were different from the organization (Jones, 2010; McAuley et al., 2007; McShane & Von Glinow, 2010; Scott & Davis, 2007). Inherent in the transformation from an ethnocentric to international perspective was individual and self-reflection about values, rules, and laws. When moral differences surfaced, the expectation was leaders reconciled the conflict through actions that could lead to market segment disengagement or code of ethics compromises (D'Aquino, 2003; DeGeorge, 2010; Schneider-Lenné, 1993; Wright & Austin, 2013).

Therefore, the persistent silos identified in the IT project literature were probably the result of organizational structures, linear thinking, and narrow perspectives according to Wang and Ahmed (2003), Meadows (2008), and Senge (1984, 1990, 1998). Further, the emerging information disclosed the complex external and internal social dynamics influenced circumstances (Asif et al., 2011; Gilley, Morris, Waite, Coates, & Veliquette, 2010). Insight into the nuances led to the assertion no two organizational situations were similar despite appearances wrote Asif et al. (2011) and Gilley, Morris, Waite, Coates, and Veliquette (2010). The findings led to Winiecki's (2010) and Neyer et al. (2009) pronouncement that managing organizational complexity required strategic agility, knowledge workers, and acceptance of risks to capitalize on opportunities or respond to threats.

The process of connecting the various factors into organizational management practices invited comparison to spirals, holograms, and quadrants that linked independent elements into holistic systems (Beck & Cowan, 1996; Graves, 1974; Küpers, 2009;

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Landrum & Gardner, 2005; Morgan, 2007; Wilber, 2000a, 2000b). The organizational

design enabled actionable knowledge, which required a balance of normative theories and

sensitiveness about the internal dynamics within organizations. Subsequently,

sociotechnical systems emerged as a leading organizational design because it used

technology concepts to integrate multiple variables believed to generate beneficial

outcomes (Asif et al., 2011; Ghosh & Sahney, 2010; Herrmann et al., 2007; Neyer et al.,

2009; van der Zwaan & de Vries, 2000). The approach solidified the interdependence of

individuals and groups with organizational structures and processes, which departed from

the bureaucratic model commonly associated with public administration (Asif et al.,

2011; Gilley et al., 2010; Morgan, 2007).

**Leadership style**. The private and public sector research on large-scale IT

projects affirmed the importance of leadership (Chua, 2009; Conboy, 2009; Gauld, 2006;

Goldfinch, 2007; Istrate & Marian, 2012; Lesca & Caron-Fasan, 2008; Loukis &

Charalabidis, 2011; Pan et al., 2007; Pawlowska, 2004; Purao et al., 2012; Willcocks &

Margetts, 1993; Yuttapongsontorn et al., 2008; Zecheru, 2013). Theoretically,

organizations became more democratic as knowledge workers emerged as an essential

aspect of sociotechnical systems. However, the studies indicated organizational outcomes

depended on leaders' influence and actions (Boaz & Fox, 2014; Ismail, Mohamed,

Sulaiman, Mohamad, & Yusuf, 2011; Nahavandi, 2012; Singh, 2009; Yukl, 2013).

Sociotechnical systems supported shared decision-making and self-directed teams

but ultimately it was leaders who established the vision and ethical principles that defined

organizational culture (Dawn, Andrew, & Ybema, 2012; Kouzes & Posner, 2012;

Nahavandi, 2012; Neck & Houghton, 2006; Wren & Bedeian, 2009). Ismail et al. (2011)

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asserted leadership remained a significant indicator about organizational readiness to implement large-scale IT projects. Emphasis on leadership continued in an era where individuals were responsible for integrating different perspectives to achieve organizational objectives (Balogun et al., 2005; Battilana et al., 2010; Kotter, 1996; Phillips & Budd, 2006; Soparnot, 2011).

Bazigos, Gagnon, and Schaninger (2016) discovered through a qualitative study that evolving awareness about external and internal organizational complexity revealed the previously defined traits were merely normative qualities. Characteristics like vision and communications skills defined leadership no matter the circumstances or organizational type (Bazigos et al., 2016). The emerging theory posited the determinant for defining effective leadership was organizational health (Bazigos et al., 2016; Korkmaz, 2007; Lencioni, 2012). Depending on organizational maturity, leadership traits beyond normative characteristics varied. Although similarities existed, each organizational situation had unique conditions that discouraged blind acceptance of leadership traits at the expense of evolving needs (Hersey & Blanchard, 1979, 1995; Lee-Kelley, 2002; Mayer, Winter, & Mohr, 2012; McCleskey, 2014).

Badshah (2012), Landis, Hill, and Harvey (2014), and Nahavandi (2012) observed the leadership theories associated with the changing philosophical epoch were contingency, situational, and transformational conceptual models. Consequently, knowledge about evolving leadership theory required understanding circumstances. Leadership characteristics associated with sociotechnical systems were awareness, willingness, and ability to conduct organizational and self-reflection (Amernic, Craig, & Tourish, 2007; Guillén & Florent-Treacy, 2011; Nesbit, 2012). Goleman (2004) wrote

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leadership performance measurement included the ability to identify conscious and subconscious behaviors that affected organizational outcomes. In addition, humility to correct inconsistent behaviors was a distinctive behavioral trait wrote Barclay, Conyers, Creaser, and White (2012), Spitzer (2007), and Yadav, Sushil, and Sagar (2013). Andolsen (2008), Clawson (2006), and Yang and Guy (2010) commented the remediation of complex issues required leaders to identify and consider less obvious risk factors. Lussier and Achua (2009) and Chin and Sanchez-Hucles (2007) added the correlating sociotechnical system leadership activities included developing learning cultures.

A leadership action was developing management systems that created symbiosis between organizational purpose and performance (Andrews & Boyne, 2010; Boin & Hart, 2003; Hansen & Villadsen, 2010; Lambright & Quinn, 2011; Vigoda-Gadot & Beeri, 2012). Ayande, Sabourin, and Sefa (2012) stated the challenge was balancing various stakeholder interests. Expectations varied regarding public administration roles. The first type of leadership was ethical based. Boin and Hart (2003) discovered the public expected idealized ethical behavior from leaders, especially related to change management that occurred with crisis. Effective public administration leaders learned from past situations and placed public safety as a primary focus in anticipation of worst-case scenarios according to Boin and Hart (2003). Command of emotions during the execution of duties earned leaders the honorific as heroic and compassionate figures (Javidan & Waldman, 2003; Lambright & Quinn, 2011; Momeni, 2009). Within this context, the determination for effective decision-making included not allowing crisis,

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self-interest, or indifference to create blind spots when executing change solutions (Andrews & Boyne, 2010; Boin & Hart, 2003; Henderson, 2004).

A second type of public administration leaders envisioned was as political agents of elected officials or lobbyists (Andersen, 2010; Barcan, 2010; Uchem & Erunke, 2013; Wilson, 2008). Public administration activities included developing and implementing policies that aligned with politically sponsored legislation or discretionary decisions of politicians who governed public administration organizations (Nutt, 2006; Öktem & Özdemir, 2013; Pandey & Rainey, 2006; Pandey & Wright, 2005). A third public administration was a trope. Careerist or "execucrat" leaders emerged from the public administration system or a specific organization ranks (Lambright & Quinn, 2011, p. 785; Riccucci, 1995; Wilson, 2008). Expectations regarding careerist leaders' role developed from internal beliefs about the business-like responsibilities deemed necessary to manage non-politicized organizations or functions such as IT, human resources, accounting, and other backend services (Wilson, 2008).

Therefore, the research literature supported the continued importance of leadership but found a need to adjust expectations based on the circumstances (Amernic et al., 2007; Bazigos et al., 2016; Ismail et al., 2011). The leadership risks identified within the private and public sector IT project research aligned. The leadership dimension mattered in theory and practice explained Boaz and Fox, (2014), Kouzes and Posner, 2012, and Yukl, 2013. Organizational vision and strategy depended on leaders' abilities to influence value-added outcomes. Effective leadership required the development of knowledge, skills, and abilities that complemented sociotechnical systems (Nahavandi, 2012; Savage-Austin & Honeycutt, 2011; Yukl, 2013). One aspect was comprehension

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about the complex environment caused by globalism, technology, and social changes (Billings & Kowalski, 2008; Maon et al, 2008; Mishra & Bhatnagar, 2012; Senge, 1990; Venter, 2010). Related, maintaining organizational value meant personal and organizational adaption (Bloch et al., 2012; Elenkov & Manev, 2005; Ismail et al., 2011; Morgan, 2007). Goleman (2004) and Guillén and Florent-Treacy (2011) stated the capability and capacity to change depended on organizational and self-awareness. Finally, leadership entailed the willingness to include a diverse workforce and perspectives within the decision-making process (Andolsen, 2008; Thomas, 2012; Thompson, 2008).

**Change management process**. The IT project studies found immature processes were a significant problem, especially within public administration organizations (Chua, 2009; Conboy, 2009; Gauld, 2006; Goldfinch, 2007; Istrate & Marian, 2012; Lesca & Caron-Fasan, 2008; Loukis & Charalabidis, 2011; Pan et al., 2007; Pawlowska, 2004; Purao et al., 2012; Willcocks & Margetts, 1993; Yuttapongsontorn et al., 2008; Zecheru, 2013). Studies by Brown and Brudney (1998) and L. Brown (2010) regarding public administration nature and IT change provided further insight about the unique problems encountered. Politics and stakeholder interests affected the ability to implement standard processes according to Conboy (2009). Istrate and Marian (2012) explained in the organizational management literature the importance of understanding strengths and weaknesses. The following literature adds to the study on IT projects by contributing scholarship on the nature of change.

H. Simon (2000) wrote to a certain point most organizations are resistant to change because of a complex web of constraints. The outer context changes related to

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social norms and preferences affected the inner context or strategies within organizations (Morgan, 2007; Scott & Davis, 2007; Shane, 2009; Tidd & Bessant, 2009; Tsoukas, 2006). Private sector leaders initiated changes to maintain organizational relevancy and market share (Hoque et al., 2006; Jain & Benyoucef, 2008; Tsoukas, 2006; Tuanmat & Smith, 2011). However, external changes also required leaders to reassess organizational inner contexts, processes, and performance measurements to improve operational efficiencies or decommission ineffective systems (Angel-Sveda, 2012; Hankey & Ryan, 2014; Parsons & Cornett, 2011; Pellettiere, 2006; Weiner, 2009).

At the theoretical level, the change process was a straightforward approach using Lewin's model (Burnes, 2004; Erwin, 2009; Gallos, 2006; Morgan, 2007; Scott & Davis, 2007; Shane, 2009). First, leaders created a vision and reason for change, which unfroze organizational culture and structures (By, Burnes, & Oswick, 2011; Coulson-Thomas, 2009). Second, leaders identified project managers who developed and implemented changes that accomplished the objectives (Istrate & Marian, 2012; Stare, 2010). Third, the organization established a new normal that refroze the changed culture and structures. However, despite the systematic process approximately 70% of change initiatives and 90% IT projects resulted in failure because of leadership, organizational readiness, or ill-defined scope (Boyd, 2008; Franken et al., 2009; Fulk et al., 2013; Sharma & Sharma, 2010; Standish Group, 2013).

Emerging theoretical information about individual and group behavior during change influenced subsequent change models that included Kotter's (1996) eight-step model. Integrated within the process were overarching principles such as creating a climate for change, engaging and enabling the organization, and implementing and

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sustaining the change explained Andrews, Cameron, and Harris (2008) and Kotter (1996). Within sociotechnical systems, the mere adoption of change no longer sufficed as a success measurement because outcome and organizational health determined effectiveness (Barclay et al., 2012; Bazigos et al., 206; Spitzer, 2007; Yadav et al., 2013).

Markus and Robey (1988) conducted a literature review study about the relationship between organizational change and IT. The researchers analyzed previous theory and field research to investigate causes or casual agency, logical argument for change or resistance, and analysis perspective or level of analysis dimensions. Table 5 summarizes Markus and Robey's (1988) findings.

Table 5

*Organizational Change and IT*

| Organizational Change Dimensions & Variables | | | |
|---|---|---|---|
| The Dimensions | Causes | Logical Argument | Perspective |
| The Variables | Technological Organizational Emergent | Variance Theories Process Theories | Individuals Organizations Society |

*Note*. Derived from Markus and Robey's (1988) findings about organizational change dimensions and variables.

The causal agency or causes dimension focused on beliefs about change in respect to the source, nature, and trajectory explained Markus and Robey (1988). The researchers used Pfeffer's situational control, rational actor, and emergent categories for comparison (Markus & Robey, 1988; Pfeffer, 1982). However, Markus and Robey (1988) updated respectively the terms as technological imperative, organizational imperative, and emergent perspective.

Markus and Robey (1988) described technological imperative as external influences on individual and organizational behavior. Outer context situations and

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conditions dictated actions within the inner context. For instance, the theoretical assumption was IT emergence as an external factor. By inference, internal organizational culture, structure, and processes would change as management "recentralized" hierarchies, power, decision-making, and collaboration to address the forces (Markus & Robey, 1988, p. 585). Markus and Robey (1988) commented that during their review of the research, the findings were contradictory. The analysis indicated situational differences led to variant outcomes about the technological imperative, which was the influence of technology on the organizational structure.

In a conceptual reversal of the technological imperative, the organizational imperative focused on internal change influencers. In this scenario, the controlling change agent was the inner context and not IT explained Markus and Robey (1988). Strategic need was the impetus for a diverse IT portfolio. The preferences and needs of organizational leaders, individuals, and groups determined IT use. The research history as articulated in studies by Galbraith (1977), Daft and MacIntosh (1978), and Olson and Lucas (1982) envisioned the supremacy of individual's discretion over IT (as cited in Markus & Robey, 1988). As with the technological imperative, empirical research supporting the organizational imperative was lacking according to Markus and Robey (1988). The significant criticism about prior research usefulness was the studies did not assess the intentions of individuals.

Markus and Robey (1988) wrote the emergent perspective within the causal agency dimension supported the idea that unpredictable and complex circumstances determined IT use within organizations. The factors that influenced the emergent perspective were threefold. First, the role of IT infrastructure within an organization was

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deterministic. Second, the relationship between conflicting business and IT strategies was unique to each organization. The third factor was the feasibility of projects and processes as individual units and as an organic whole (Markus & Robey, 1988). The organizational challenge with the emergent perspective was the complex knowledge required to construct and sustain relevancy within changing environments.

Markus and Robey (1988) explained the logical structure dimension examined the theoretical argument formulation for change or resistance. Of interest was rationalizing the inconsistencies found within the causal agency dimension. Imbedded into the mix was conflicting theory, which was the impetus for possible resistance wrote Markus and Robey (1988). The researchers remarked "…outcomes are (partially) predictable from a *knowledge of process* [Markus and Robey's emphasis], not from the level of predictor variables," (Markus & Robey, 1988, p. 590). However, also influential were the randomness of circumstances that included stakeholders' sentiment, IT solution options, and executive decisions. Central to the logical structure dimension was the variant and process theories assumptions concerning the relationship between antecedents and outcomes.

Markus and Robey (1988) wrote variant theories supposed a symbiotic relationship between a priori factors and outcomes when likely conditions existed. The constancy permitted predictions when precursors were evident. Process theories were more absolute and finite (Markus & Robey, 1988). Occurrence or non-occurrence could happen only under certain conditions. Markus and Robey (1988) supported Mohr's (1982) proposition that variance and process theories could co-exist. The one condition for the theoretical conflation was each theory should remain distinctively different

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because of inherent flaws requiring unique management according to Mohr (1982) (as cited in Markus & Robey, 1988). The logic for the cautious approached was multilayered. First, at some point variance theories corrective actions would become redundant and offer no insight or value. The saturation demarcation must remain certain according to Markus and Robey (1988). Second, within process theory unreasonable demands or expectations could lead to bureaucracy. Third, each theory had distinct findings that if integrated could leave unexplained in-analogous findings.

The level of analysis dimension referred to how researchers studied stakeholder sentiment (Markus & Robey, 1988). Problems of inference and ideological bias distorted individuals, organizations, and societal concerns. Interrelationship dynamics compounded studies validity. A concern was the propensity to pursue research from either a macro or micro theoretical level (Markus & Robey, 1988). The approach determined the composition of boundaries like demographic and functional constructs. Normally, macro-level theories focused on organizations and societies, whereas micro-level theories included individuals and small groups. Commonly absent from macro-level studies were individuals' beliefs, values, or motives according to Markus and Robey (1988). Conversely, micro studies failed to provide a consistent broader context.

Therefore, the reasons for the change process risks were complex considering Kotter's (1996) theory that focused on specific steps to Markus and Robey's (1988) examination of conceptual structures used to consider the reasons for change. The literature provided insight into organizational transformation beyond the traditional application often used by organizations. The findings advanced awareness that change management models like Lewin's and Kotter's were not linear. Dynamic factors from the

outer and inner contexts affected processes, content, and outcomes. In addition, Markus and Robey's (1988) study contributed by demonstrating how thinking approaches along with individual, group, and social constructs influence processes to implement change. Consideration of one without the others invited IT project volatility.

**Technology strategy**. Hallow (2005) wrote the effective management of significantly sized IT projects required a symbiotic relationship among multiple factors. Foremost, the situation elevated the role of project manager. The organizational resources were critical to creating win-win situations and value according to Hallow (2005). Hallow (2005) concurred with other studies stating project managers must possess sufficient knowledge about change management processes and the business and technology strategies.

The influence and uncertainty about IT as a strategic option required more in-depth analysis not found within the IT project literature. The evolution of the sociotechnical system signified the shift toward a knowledge economy according to Henderson and Venkatraman (1999), Piotrowski (2015), Scott and Davis (2007), Shane (2009), T. Brown (2010), and Tidd and Bessant (2009). The industrial age's production of things became less significant for multinational corporate leaders. Instead, organizational strategy to increase competitive advantage emphasized access to information. Data mining of software applications and internet browsers that tracked consumer activities or interests became a business norm. The shift in organizational vision also bridged the time and spatial dissonance associated with the twentieth-first century global environment (Tsoukas, 2002; Tsoukas & Chia, 2006). The circumstances meant organizational growth depended on decision-makers access to available

information or individuals' "…intellectual capabilities…," (Drucker 1999, 2002; Powell & Snellman, 2004, p. 199). Implementation of sociotechnology system theory into practice required a synergy between organizational and technical strategies.

*Knowledge economy*. The foundational elements of the sociotechnological era were information and communications using the internet, social media, telephonic, and software applications wrote Hallow (2005), Pawlowska (2004), Piotrowski (2015), Powell and Snellman (2004). Piotrowski (2015) explained the range of organizational actions extended from complex activities requiring high skilled internal competencies to low-skilled tasks that could be outsourced. Besides developing the major technical components that captured data, organizations depended on knowledge workers to mine data through transcription, classification, and analysis.

Powell and Snellman's (2004) study on intellectual capabilities within the knowledge economy reviewed patent data and scholarly literature to determine if technology increased organizational productivity. A brief history documented technology's development over multiple eras. Alan Turing's mathematical formula that solved the German's enigma code was the seminal IT discovery, which led to wider computing adoption within the business industry during the 1950s. Incremental advances from the 1960s through 1970s improved IT feasibility for organizations. During the 1980s and 1990s, Powell and Snellman (2004) wrote the proliferation of personal computers occurred within business and educational systems. However, the internet and email widespread use for social and entertainment interaction was the impetus, in part, for the knowledge economy (Powell & Snellman, 2004). Powell and Snellman (2004)

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adopted a rational scientific design to test the thesis that a knowledge economy emerged because of the demand for information generation and dissemination.

The first of two hypotheses concerned whether a knowledge economy existed or was only theoretical (Powell & Snellman, 2004). The three metrics included United States Patent and Trademark Office data (Powell & Snellman, 2004). During the prolific 20-year period beginning in the 1980s, the issuance of patents tripled or increased by 252% according to Powell and Snellman's (2004) research. Powell and Snellman (2004) asserted the "trends suggest[ed] a recent marked acceleration in the production of new knowledge" (p. 202). The second metric was an increase in science and engineering workforce that grew by 159% during the same period (National Science Board, 2002; Powell & Snellman, 2004). The demand for workers indicated a shift in business orientation. Collaboration across organizational sectors was the third metric. Powell and Snellman (2004) commented the willingness of organizations to collaborate with other business communities indicated an interest in "producing and distributing novel ideas" (p. 205). For instance, scientific research into human genome required the participation of multiple organizations within various countries. Technology facilitated the collaboration across time and geography through the internet, telephonic equipment, and computer software.

The second hypothesis in Powell and Snellman's (2004) study held organizational production increased with the advent of technology. Empirical evidence was difficult to develop that supported this proposition. Citing several studies, Powell and Snellman (2004) wrote the research identified a strong and positive relationship between organizations use of technology and productivity. However, organizational strategies and

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practice changes must accompany technology implementation but research on real-world

internal factors was lacking. Powell and Snellman (2004) concluded their study stating

that an obvious relationship between productivity and technology existed but any

declaration of truth was premature (Powell & Snellman, 2004).

   ***Strategic alignment between IT and business***. The interest in organizational

conditions for IT adoption led to Henderson and Venkatraman (1999) documentation of

four potential strategic relationships between business and IT. The research observation

was part of a compendium about organizational strategic alignment that influenced

subsequent studies. Companion articles used Henderson and Venkatraman's (1999)

strategic alignment model as the means to conceptualized approaches for implementation.

As Henderson and Venkatraman (1999) model contributed significantly to the companion

articles, the observational study served as the literature review representative.

   Henderson and Venkatraman (1999) stated a universal strategy to align IT with

business was non-existent because of situational differences. Instead, organizational

leaders should use IT based on the ability to improve competitive potential or service

levels. Thus, IT was not a panacea. Traditionally, IT had an internal orientation that

focused on application portfolios, equipment and software configurations, IT processes,

and staff skills (Henderson & Venkatraman, 1999). Changes in the knowledge economy

required an enhanced perspective that developed an external orientation regarding IT

investments. Besides alignment, organizational leaders needed to integrate IT

functionally with business. Henderson and Venkatraman (1999) wrote the strategic

actions included incorporating IT within the business scope to support or define new

market choices. Further, the integration of IT supported business scopes that made

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services available off hours and year-round such as department stores websites that connected to automated catalog systems. Finally, external alignment and integration meant an expansion of governance by seeking external joint ventures or collaborations to ensure IT competency matched the business need.

Henderson and Venkatraman (1999) identified four dominant alignment perspectives that linked across domains. The researchers organized the perspectives by drivers. First, the business strategy driver included the strategy execution and technology transformation perspectives or domains. Strategy execution domain was the classic organizational formation, which held business strategy influenced organizational objectives and IT structure. Within this perspective, the traditional vertical hierarchy existed that relied on executives to define strategies. The role of IT resources was as implementers according to Henderson and Venkatraman (1999). Internal IT resources were responsible for designing, implementing, and managing technology along with the infrastructure architecture supporting processes. The second business strategy domain was technology transformation. The features were similar to the strategy execution perspective. However, technology transformation differed because organizational design constraints did not exist. Instead, technologists sought the most appropriate solutions and competencies from internal and external resources (Henderson & Venkatraman, 1999).

The second driver was IT strategy as the enabler according to Henderson and Venkatraman (1999). The perspectives included within these domains viewed IT as a means to develop new or enhanced existing business strategies. Implicit within these domains was a synthesis of business and IT strategies. Accordingly, the competitive potential domain objective was to exploit emerging technologies to develop business

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products and services (Henderson & Venkatraman, 1999). The competitive potential relied on the notion that business strategies were not static but adaptive. As such, multiple strategic options co-existed, that influenced organizational design and IT. Finally, Henderson and Venkatraman (1999) defined the service level domain as building a "world-class" IT organization (p. 479). Business strategy served as a stimulator of customer demand but had only an indirect influence on IT strategy explained Henderson and Venkatraman (1999). Organizational executives prioritize business and IT proposals to allocate resources, while top-level IT managers served as executive leaders responsible for ensuring internal business services succeed based on organizational performance expectations.

The strategic alignment model illustrated the evolving role of IT within the organizational business strategy (Henderson & Venkatraman, 1999). The constant changes within the external environment dictated organizational leaders assumed different perspectives based on the circumstances. Thus, as Henderson and Venkatraman (1999) found, the best strategic alignment and integration approach addressed four imperatives. First, leaders should integrate the internal perspective with an external awareness. Besides executives, business and IT middle managers should understand the relationship between the strategy execution and technology transformation domains (Henderson & Venkatraman, 1999). Lack of awareness sustained operational silos or implemented unattainable IT strategies because of misalignment with the business strategy. Second, Henderson and Venkatraman (1999) advised leaders to develop strategic options like the four perspectives that were applicable for different situations. Leaders must accept the evolutionary nature of business environments that required

continual strategic adjustments (Henderson & Venkatraman, 1999). Third, business and IT leaders must accept that roles and responsibilities will change based on the strategic approach and circumstances. The process required an organizational learning culture that valued self and organizational reflection to manage egos, politics, and other disruptive behaviors (Henderson & Venkatraman, 1999). Fourth, leaders should establish performance criteria to measure business and IT strategies. The measurements should include a cross-section of performance criteria like operational costs, service level quality, profits, and investments centers. Table 6 illustrates the strategic alignment model.

Table 6

*Strategic Alignment Model*

| Driver: Business Strategy | | Driver: IT Strategy as the Enabler | |
| --- | --- | --- | --- |
| Perspective One: Strategy Execution | Perspective Two: Technology Transformation | Perspective Three: Competitive Potential | Perspective Four: Service Level |
| Business Strategy: Classic business use of IT | Business Strategy: Distinguished business products & services developed by IT | Business Strategy: Market dominance created by IT | Business Strategy: Internal business innovation by IT |
| IT Strategy: Internal | IT Strategy: Internal & External | IT Strategy: Internal & External | IT Strategy: Internal & External |
| Example: Standard computing equipment & Internet access | Example: Online banking | Example: Overnight delivery of shipping packages | Example: Virtual office permitting untethered access to desktop computers |
| Business Role: Strategy Developer | Business Role: Technology Visionary | Business Role: Business Visionary | Business Role: Prioritizer |
| IT Role: Strategy Implementer | IT Role: IT Architect | IT Role: Organizational Catalyst | IT Role: Executive Leader |

*Note.* Derived from Henderson and Venkatraman's (1999) strategic alignment model.

Therefore, the IT research was beneficial in detailing how organizational business strategies intentionally or unintentionally evolved to integrate technology as a business strategy or enabler (Hallow, 2005; Henderson & Venkatraman, 1999; Powell & Snellman, 2004). Powell and Snellman's (2004) study mapped the antecedent conditions that facilitated the sociotechnological era. The outcome was a knowledge economy that relied on information from data systems. The dependency explained IT ubiquitousness and importance within the modern organization. Henderson and Venkatraman's (1999) study examined the relationship between business and IT strategies. The research findings provided copious information about how business drivers, perspectives, roles and responsibilities, and performance measurement changed based on outer context, inner context, and content scenarios. The interrelated research on public administration nature, organizational management principles, leadership styles, change management process, and technology strategies was critical to adding depth to the IT project studies risk factors.

**Literature Analysis**

Beyond research generalizations about large-scale IT project failures, situational differences made it difficult to apply risk factors blindly (Chua, 2009; Conboy, 2009; Gauld, 2006; Goldfinch, 2007; Istrate & Marian, 2012; Lesca & Caron-Fasan, 2008; Loukis & Charalabidis, 2011; Pan et al., 2007; Pawlowska, 2004; Purao et al., 2012; Willcocks & Margetts, 1993; Yuttapongsontorn et al., 2008; Zecheru, 2013). The problems of IT projects were distributed throughout Willcocks and Margetts' (1993) risk management model. However, risks associated with the inner context that included content, process, and outcomes were greater in number than uncontrollable external risks.

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The research provided limited insight into the root causes or reasons for the sustained occurrence, which led to the studies authors recommending additional research (Chua, 2009; Conboy, 2009; Gauld, 2006; Goldfinch, 2007; Istrate & Marian, 2012; Lesca & Caron-Fasan, 2008; Loukis & Charalabidis, 2011; Pan et al., 2007; Pawlowska, 2004; Purao et al., 2012; Willcocks & Margetts, 1993; Yuttapongsontorn et al., 2008; Zecheru, 2013). Consequentially, incorporated into the literature review was independent research on public administration nature, organizational management principles, leadership style, change management processes, and technology strategies. Willcocks and Margetts' (1993) study served as a means to thread the research by outer context, inner context, content, process, and outcome-oriented risk factors. Synthesizing the findings required the inclusion of studies about related theoretical concepts.

**Political enthusiasm**. A unique challenge using IT projects within public administration was the extent of political influences on decision-making (Gauld, 2006; Loukis & Charalabidis, 2011; Pawlowska, 2004; Purao et al., 2012). The risk factor affected policy development and implementation wrote Loukis and Charalabidis (2011). Gauld (2006) and Pawlowska (2004) added public sector leaders experienced greater pressure to implement inappropriate technology than their private sector counterparts did. Unmanaged managerial and stakeholder enthusiasm contributed to political failures for four reasons Goldfinch (2007), Purao et al. (2012), and Yuttapongsontorn et al. (2008) discovered. First, technology became a transformative means to reform public administration. Public discontent with public administration perceived value precipitated the implementation of risky IT projects wrote Goldfinch (2007). However, external shifts from a manufacturing to knowledge-based economy also portended an indefatigable

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technology growth and dependence (Shane 2009; Tidd & Bessant, 2009; Tiller, 2011). Public administration research found the frequent impetus for change was a crisis that required immediate reformation to ensure public safety and security (Abramson et al., 2007; Bouvard et al., 2009; Fernandez & Rainey, 2006; Franken et al., 2009; Hagen & Liddle, 2007; Rainey & Steinbauer, 1999). Thus, pressures from political figures along with other stakeholders like the public meant adoption of IT as a strategic solution no matter the organizational readiness (Goldfinch, 2007; Henderson & Venkatraman, 1999; Powell & Snellman, 2004).

The second unmanaged political enthusiasm associated with IT projects was the belief technology as a panacea (Gauld, 2006; Goldfinch, 2007; Henderson & Venkatraman, 1999; Loukis & Charalabidis, 2011). This tendency led to automatic use of technology as a strategic solution without consideration of extenuating factors. Goldfinch (2007) commented fascination with emerging technology like the *cloud* and *voice over internet protocol* created unrealistic expectations about what was achievable. Devoid of analysis about the strategic relevance or operational readiness, technology became "an end in itself" in some situations explained Goldfinch (2007, p. 921). Tsoukas' (2002, 2006) writings elaborated on the temporal urgency to meet external changes. The rush to participate in trends or satisfy interests affected the internal effort to determine strategic relevancy and organizational readiness prior to IT project initiation (Henderson & Venkatraman, 1999; Markus & Robey, 1988).

The aforementioned situation left organizations vulnerable to internal technologists or external sales representatives promoting new products without an articulated business need or purpose, which was the third IT project political enthusiasm

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(Goldfinch, 2007; Henderson & Venkatraman, 1999). Promises or assertions about IT projects or technology value rarely materialized (Gauld, 2006; Goldfinch, 2007; Pawlowska, 2004; Powell & Snellman, 2004). Henderson and Venkatraman (1999) added the unclarified or competing business and IT strategies was often the culprit for creating project dysfunction. For instance, several researchers including Conboy (2009), Gauld (2006), Goldfinch, (2007), Loukis and Charalabidis (2011), Pawlowska (2004), Purao et al. (2012), and Yuttapongsontorn et al. (2008) cited failures in managing stakeholders as a reason projects experienced problems. Conflicting interests and unarticulated priorities revealed leaders were susceptible decision-makers influenced by external and internal relationships (Thompson, 2008; Yukl, 2013; Yuttapongsontorn et al., 2008).

Finally, several researchers including Gauld (2006) and Goldfinch (2007) found organizational participation in global business fads was the fourth political enthusiasm. Within public administration, keeping pace with marketplace competitors was not a concern because the organizational purpose was providing public goods and services. However, a competitive professional spirit thrived among peers according to Goldfinch (2007). The rush to be the first among peers occurred within public administration environments. Influential individuals generated enthusiasm for fads (Bateman & Snell, 2007; Boynton & Fisher, 2005; Lencioni, 2002; Maital & Seshadri, 2007; Parker, 2008). Goldfinch (2007) opined that the behavioral phenomenon was borne from favorable bias about private sector entrepreneurial and innovative solutions. The political enthusiasm ignored the bureaucratic organizational culture that supported low risk and stable environments (Goldfinch, 2007; Wilson, 2008). Operational ignorance regarding the

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symbiotic relationship between the business and IT interests contributed to IT project inconsistencies according to Henderson and Venkatraman's (1999).

**Organizational controls**. The IT project research found public administration organizations were a summation of external and internal systems with distinct attributes (Gauld, 2006; Goldfinch, 2007; Loukis & Charalabidis, 2011; Pawlowska, 2004). Within public administration organizations, a tension existed between theory and practice (Rainey, 2012; Riccucci, 2010; Rishel, 2011; Wilson, 2008). IT projects exemplified the schism.

On the one hand, internal controls like structure and culture helped to maintain rational and predictable environments defined by the bureaucratic model (Udy, 1959; Wilson 2008). Traditionally, the administrative goals were to minimize risks and disruption wrote H. Simon (1947) and Waldo (1948). The administrative designs that ensured stability included formal vertical structures. Relegated exclusively to leaders was power, authority, and control (H. Simon, 1947; Riccucci, 2010; Waldo, 1948; Wilson, 2008). Reinforcing the rigidity was the coexistence of multiple authority layers. The situation meant defined boundaries were the means leaders internalized organizational goals. H. Simon (1947) explained specific realms of responsibilities determined acceptable decisions and actions. The narrow perspective created organizational silos and blind spots according to Balogun et al. (2005), Collins (2001), Hoque (2011), and Ashkenas et al. (2002).

Conversely, political pressures forced organizational leaders to manage events with unpredictable outcomes because of external factors (Gauld, 2006; Goldfinch, 2007; Loukis & Charalabidis, 2011; Pawlowska, 2004). The conditions required a flexible,

interoperable, and open environment to respond quickly to threats or opportunities. Sociotechnical systems met the need according to Asif et al. (2011), Ghosh and Sahney (2010), Herrmann et al. (2007), Neyer et al. (2009), and van der Zwaan and de Vries (2000). The organizational theory inherently eliminated the vertical and horizontal boundaries that prevented collaboration. Goldfinch (2007) concluded the complex circumstances were difficult to manage with the rational intent of the bureaucratic model. Instead, learning cultures that shared responsibilities and power among executives, managers, and staff were the new standard (Yukl, 2013).

*People-oriented factors*. The relationship between leaders and subject matter experts or technologists was paramount on IT projects according to Gauld (2006), Goldfinch (2007), Pawlowska (2004), and Purao et al. (2012). Also essential was clear roles and responsibilities based on the situation for individuals and groups (Conboy, 2009; Zecheru, 2013). Leaders' ability to control projects proved challenging for two significant reasons. First, in comparison to technologists or other project participants, leaders' knowledge was insufficient according to Goldfinch (2007) and Pawlowska (2004). Hands-on participants understood best the technology and project status, which made leaders dependent on formal and informal communications. Information distribution depended on incentives that favored concealment or sharing. Rudimentary progress or oversight reports were poor substitutes as they routinely redacted, underreported, or falsified bad news (Goldfinch, 2007).

Second, Goldfinch (2007) found authority by expertise versus position was a source of tension. IT projects employed a diverse resource team dependent on specific functional expertise. CIO and project director appointments were political. Authority of

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position was not necessarily derived from knowledge or experience. Goldfinch (2007) identified behavior and seniority as the qualifications instead of merit. At the day-to-day execution level, individuals represented groups with different professional concerns, languages, and practices. Superimposed on the functional role was the separate project and organizational cultures. Conceivably, an individual with a faddish IT perspective operated within a bureaucratic budgeting or organizational management culture. The individuals' singular focus was the activities associated with group functional roles like technology, personnel, or budgeting. Goldfinch (2007) wrote technologists especially had a heroic and individualistic mentality that fed into a belief that engineering problems were solvable. Lost in the pursuit was a holistic diagnosis (Goldfinch, 2007). The inability to engage other functional groups or accept leadership direction was a failure point.

Bazigos et al. (2016) concluded people-oriented factors relied on executives, managers, and staff willingness to adapt within learning cultures. Traits like interpersonal skills were normative behaviors. Drucker (1999, 2002) wrote organizational relevancy required the democratization of organizations. A means to ensure movement towards the concept was engaged knowledge workers who were empowered to lead change. Situational leadership complemented the evolving sociotechnical system construct.

*Process-oriented factors*. Another IT project risk factor category was organizational processes that were insufficient or undefined (Loukis & Charalabidis, 2011; Pawlowska, 2004; Zecheru, 2013). Organizational culture influenced stakeholder resistance or tolerance of change stated Loukis and Charalabidis (2011) and Markus and Robey (1988). This behavioral norm first manifested in the unwillingness to reengineer

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business processes during the change process. Instead, non-technical participants expected the proposed IT solution to incorporated as-is business processes. The inability to recognize or accept the changes required through the adoption of technology was a critical failure. The cognitive dissonance contradicted organizational change management principles (Alas, 2007; Dzik-Jurasz, 2006; Erwin, 2009; Purao et al., 2012). Loukis and Charalabidis (2011) identified a second risk as the inappropriate roles and responsibilities of organizational actors as a risk. A third process-oriented risk, by extension, the maturation of business analysis, project management, and software development processes was lacking. The fourth risk identified was the relationship between IT and non-IT, which created uncertainty and maintained persistence of silos within many organizations (Loukis & Charalabidis, 2011). A fifth risk area related to insufficiency was the lack of organizational knowledge and learning (Loukis & Charalabidis, 2011).

Another process-oriented issue was the administrative actions required to implement IT projects (Conboy, 2009; Goldfinch, 2007; Loukis & Charalabidis, 2011). The IT project studies findings on process risks aligned with Markus and Robey's (1988) research about process development complexity. Conscious and unconscious behavior affected individuals and groups willingness to follow or reengineer processes (Loukis & Charalabidis, 2011; Zecheru, 2013). The existence of processes is not the sole determinant of IT project success. Inconsistencies existed because of conflicting emerging, technological, and organizational imperatives. Markus and Robey (1988) explained process effectiveness was contingent on individuals having both the knowledge of process and awareness about the randomness of circumstances. The willingness to

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remain open-minded reflected the existence of a learning culture required for sociotechnological organizations.

Therefore, the research on IT projects, especially the inner context, identified several problems factors (Chua, 2009; Conboy, 2009; Gauld, 2006; Goldfinch, 2007; Istrate & Marian, 2012; Lesca & Caron-Fasan, 2008; Loukis & Charalabidis, 2011; Pan et al., 2007; Pawlowska, 2004; Purao et al., 2012; Willcocks & Margetts, 1993; Yuttapongsontorn et al., 2008; Zecheru, 2013). Prominent among the inner context issues were political and organizational factors. The political factors were external to most organizations. Politicians and control agencies dictated policies that regulated public administration organizations. Equally influential were organizational factors such as people and process-oriented issues. Although controllable from inner context perspectives, internal problems posed significant challenges for public administration leaders. The willful intent of stakeholders albeit individuals and groups affected IT project outcomes (Conboy, 2009; Goldfinch, 2007; Goleman, 2004; Guillén & Florent-Treacy, 2011; Purao et al., 2012; Yuttapongsontorn et al., 2008).

**Conclusion**

Several case studies on IT projects that spanned various research topics provided a general sense of the problems affecting implementation outcomes (Chua, 2009; Conboy, 2009; Gauld, 2006; Goldfinch, 2007; Istrate & Marian, 2012; Lesca & Caron-Fasan, 2008; Loukis & Charalabidis, 2011; Pan et al., 2007; Pawlowska, 2004; Purao et al., 2012; Willcocks & Margetts, 1993; Yuttapongsontorn et al., 2008; Zecheru, 2013). The literature disclosed the complexity of IT projects. Researchers identified the outer context, inner context, content, process, and outcome dimensions as the problem sources

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but in differing degrees. The outer context was uncontrollable and problematic because of the individual and group perceptions about global conditions and forces explained Casasanto and Boroditsky (2007), Karmakar and Kasturirangan (2011), Tsoukas (2006) and Willcocks and Margetts (1993). Hence, organizational leaders could only monitor external conditions to minimize organizational risks or seize upon opportunities.

Willcocks and Margetts (1993) noted leaders' realm of influence was the internal organizational dimension as illustrated in Figure 1. The research on private and public sector IT projects established categories and classifications. However, the information imparted had limitations, especially related to the public sector with an average of 1.5 participants per study. The internal dimension inclusive of the risk management model's inner context, content, process, and outcome was the most problematic source according to the studies' findings (Chua, 2009; Conboy, 2009; Gauld, 2006; Goldfinch, 2007; Istrate & Marian, 2012; Lesca & Caron-Fasan, 2008; Loukis & Charalabidis, 2011; Pan et al., 2007; Pawlowska, 2004; Purao et al., 2012; Willcocks & Margetts, 1993; Yuttapongsontorn et al., 2008; Zecheru, 2013). Literature on organizational management, leadership, and change management added necessary context to some of the studies findings. The dynamism of sociotechnical systems required conscious decisions to ensure structural flexibility in respect to strategies, individual and group participation levels, and structural designs (Asif et al., 2011; Gosh & Sahney, 2010; Henderson & Venkatraman, 1999; Herrmann et al., 2007; Meadows, 2008; Neyer et al., 2009; Powell & Snellman, 2004; van der Zwaan & de Vries, 2000).

Specific to public administration, the general IT project problems illuminated the specific complexity and contradictions within the organizations that was found within

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Riccucci (2010) and Wilson (2008) research. Intertwined within the inner context issues were philosophical polarities that created strategic tension, ambiguity, and uncertainty (Loukis & Charalabidis, 2011; Pawlowska, 2004; Zecheru, 2013). For instance, the interests of politicians, collaborators, lobbyists, or the public significantly influenced perceptions about IT projects value according to Purao et al. (2012) and Yuttapongsontorn et al. (2008). The literature generally explained that stakeholder interests, internal participants' capabilities, organizational strategic alignment, and operability of processes were reason IT projects failed or were abandoned.

**Summary**

After 40 years of leaders adopting IT projects to affect organizational change, implementation problems persisted (Gilbert & Reid, 2009; Komkov et al., 2012; Obeidat & North, 2014; Rosacker & Rosacker, 2010; Townsend 2010). The 35-years of IT project studies resulted in a research library that provided a general sense about the complex problem. Categories emerged best characterized by Willcocks and Margetts' (1993) study about the five risk areas shown in Figure 3. Spanning 20 years, the 13 mostly international case studies identified outer context, inner context, content, process, and outcome related risks. Beyond this finding, in-depth causes for the ongoing reasons why the problems existed or persisted remained hidden.

The literature's research value depended on the investigation lens. For the study, a concern developing in-depth awareness about the systemic problems required further information because the reviewed literature had limitations. The limited number of studies or participants concentrating on public administration organizations was a concern. The average population size was 1.5 participants. Further, with the notable

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exception of Pan et al. (2008) and Loukis and Charalabidis (2011) studies an integrated research approach was absent. The lack of insight into how organizational complexity manifested and affect on IT projects demonstrated existing limitations identified by many researchers including Raadschelders (2011), Raadschelders and Lee (2011), and Shapiro and Rynes (2005). For the literature selection and review processes, awareness about the various research avenues the problem intersected was integral. The literature on public administration nature, organizational management principles, leadership styles, change management processes, and technology strategies gave critical insight into the potential problem sources. Bounded by the theoretical framework, AQAL provided the mechanism to organize the studies and disclose the interrelationship among the material (Küpers, 2009; Landrum & Gardner, 2005; Wilber, 2000a, 2000b). Therefore, the interrelated topics along with the specific studies on the private and public sector IT projects provided the foundation to conduct further research.

Chapter 3

Method

The research purpose was to examine through the CIO perspective internal organizational factors that influenced large-scale IT projects using the California's statewide mandated frameworks to determine why IT projects failed or succeeded. The research objective was to document project leaders' experiences during in-person interviews. By logical deduction, the research approach was a qualitative method and narrative design. Data triangulation occurred as an organic byproduct of the research design, sources, and multifocal theoretical lens. California CIOs at the state-level oral histories were the primary data sources for the internal context but the inclusion of other sources that added context was permissible within qualitative studies (Alsaawi, 2014; Knox & Burkard, 2009; Seidman, 2006). The literature examined in Chapter 2 disclosed previous information about the external macro and micro dimensions illustrated in Figure 1 was sufficient because the primary sources of IT project problems were within the controllable internal dimension.

**Research method appropriateness**. The selected research method was qualitative because it permitted the examination of contemporary events, situations, or experiences through first-hand accounts (Cone & Foster, 2006; Creswell, 2013; Di Pofi, 2002; Leedy & Ormrod, 2010; Neuman, 2006; Willis, 2007). Qualitative research incorporates data from multiple sources to explain the problem, situation, and findings (Cone & Foster, 2006; Creswell, 2013; Leedy & Ormrod, 2010; Neuman, 2006; Willis, 2007). On the contrary, quantitative studies collect statistical data to test theory (Cone & Foster, 2006; Creswell, 2013; van Manen, 2014; Waugh & Waugh, 2004). The latter

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method relies on a fixed scientific rigor that sterilizes the data collection process. Emerging data or sources unidentified prior to the research initiation remains out of scope during analysis.

Qualitative methods use adaptive processes that facilitate timely validation of the data and findings (Cone & Foster, 2006; Creswell, 2013; Leedy & Ormrod, 2010; Neuman, 2006; Willis, 2007). For the study, the means to minimize irrelevant or errant data was the integration of multiple perspectives. The research process used the AQAL theoretical framework multiple quadrants to analyze data and identify meaningful themes.

**Research design appropriateness**. Narratives document stories about an experience using multiple data sources including individual interviews (Creswell, 2013; Leedy & Ormrod, 2010; Neuman, 2006; Willis, 2007). The experiences may not be uniform. Consequentially, the design affords flexibility to accommodate different and unknown data to develop findings (Creswell, 2013; Leedy & Ormrod, 2010; Neuman, 2006; Willis, 2007). The three narrative formats available to collect data include autobiographies, biographies, and life writings or oral histories that chronicle the experiences.

The oral histories envisioned for the study relied on collaboration between participants and the researcher (Alsaawi, 2014; Knox & Burkard, 2009; Seidman, 2006). The relationship dynamics between the participants and researcher was paramount. A safe and comfortable interview environment enabled honest and open communications (Alsaawi, 2014; Creswell, 2013; Mason, 2010; Knox & Burkard, 2009; Seidman, 2006).

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Further, the researcher's listening skills and subject familiarity were critical to understand the context without interjecting bias or antagonizing the participants.

Research using individual narratives is an imperfect science (Creswell, 2013; Mason, 2010; Seidman, 2006). Subjective stories because of intentional or unintentional bias were a concern. Other potential issues that required management included the lack of prior knowledge about participants' inner psyches and undisclosed outer lives (Creswell, 2013; Edel, 1984; Seidman, 2006). The research technique adopted to minimize the concern was a multi-phase approach to collect biographical, experiential, and reflective data (Alsaawi, 2014; Knox & Burkard, 2009; Seidman, 2006). The triangulation increased the research integrity and reliability. Within the first phase of the CIO study, the biographical data provided background information about CIOs training and career histories. A questionnaire sent to participants prior to the in-person interview collected background data. During the second phase, the CIOs stories recorded during interviews provided in-depth information about his or her large-scale IT project experiences. A concluding phase three question asked during the interviews permitted the opportunity to capture data about philosophical beliefs that explained how participants make sense of the experiences. The last phase helped to contextualize the phase two data.

Besides data triangulation, research reliability depends on the ability to generalize the findings across several subjects or business sectors (Creswell, 2013; Leedy & Ormrod, 2010; Mason, 2010; Neuman, 2006; Seidman, 2006). Narratives achieve the aforementioned through the inclusion of multiple worldviews within a research population (Mason, 2010; Seidman, 2006). Ideally, the sample group's narratives identify diverse factors that enable a meaningful data analysis. However, data saturation rigor is

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not for its own sake. Participant selection was within the context of the research problem, purpose, and population as recommended by Creswell (2013), Mason (2010), and Seidman (2006). The study's measurement for data saturation was three consecutive interviews with no new information revealed.

The California state-level public administration system has approximately 300 organizations with 125 CIO positions (Department of Technology, 2014a). For the study, the CIO population size was significantly fewer after accounting for vacancies, individuals holding multiple positions, organizational structures, and experience with large-scale IT projects. Removed from consideration were organizations that did not have IT departments. The organizations received technical services through statewide data centers or other public administration organizations. Within the non-compliant organizations, resources served as project stakeholders and not leaders. An initial assessment revealed approximately 10 California organizations implemented large-scale IT projects since 2005. Thus, the research population consisted of current or former California CIOs who served in statewide public administration organizations that implemented large-scale IT projects. Considering previous literature, the population size increased from the averaged 1.5 to 9 participants (Chua, 2009; Conboy, 2009; Gauld, 2006; Goldfinch, 2007; Istrate & Marin, 2012; Lesca & Caron-Fasan, 2007; Loukis & Charalabidis, 2011; Pan et al., 2008; Pawlowska, 2004; Purao et al., 2012; Willcocks & Margetts, 1993; Yuttapongsontorn et al., 2008; Zecheru, 2013). A summary of other qualitative research designs considered for this study follows.

First, correlational studies investigate the extent of a relationship between two or more variables using statistical data (Creswell, 2013; Leedy & Ormond, 2010; Neuman,

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2006). Inferred data relationships are not permissible because they may lead to erroneous assumptions. Thus, a correlational study was inappropriate because the internal systemic variables affecting IT project outcomes were unknown.

Second, grounded theory design creates a theoretical basis to explain processes or actions (Creswell, 2013; Leedy & Ormond, 2010; Neuman, 2006). Derived from both objective and constructed means, the purpose is to develop theory from data (Creswell, 2013; Leedy & Ormond, 2010; Neuman, 2006). Grounded theory design generates a generalized explanation. In this study, the intent is to examine CIOs IT project experiences. As the study has the research questions and theoretical framework identified, grounded theory was not the appropriate means to conduct the research.

Third, case study design examines events or situations through in-depth research (Creswell, 2013; Stake, 1995, 2006; Yin, 2012, 2014). A distinguishing feature is the use of multiple participant perspectives and researcher observation to document the experience. Descriptive case studies inquire about what is or has occurred, while explanatory case studies seek insight into how or why an event happened (Stake, 1995, 2006; Yin, 2012, 2014). For the study, the researcher does not observe IT project activities within the organization. CIOs stories were the data source, which eliminates case studies as an option.

Finally, phenomenological studies describe the psychology that influences participants' perspectives about the experience (Creswell, 2013; Küpers, 2009; Lindseth & Norberg, 2004; Moustakas, 1994; van Manen, 2014). Research questions focus on the how and why of things. The underlying concern is studying the phenomenon as a small group experienced the shared event. This approach is beyond the mere recording of

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participants' stories. The research process requires in-depth inquiry to describe the essence of the experience (Lindseth & Norberg, 2004; Moustakas, 1994; van Manen, 2014; Wilson & Washington, 2007). Research reservation about phenomenological studies exist (Creswell, 2013; Moustakas, 1994; van Manen, 2014). Process abstractness along with the subjective analysis process tempers the research community's acceptance of the data and findings. Another concern is uncertainty about whether the collected data reflects participants' perspectives versus the researcher's interpretation (Creswell, 2013; Moustakas, 1994; van Manen, 2014). The issues removed from consideration the phenomenological design as an option for the study on large-scale IT projects.

**Assumptions.** Assumptions are basic propositions believed to be true about the study (Leedy & Ormrod, 2010; M. Simon, 2011). Without assumptions, the research is irrelevant because underlying factors need clarification or articulation. The assumptions for the study were:

- Participants were willing to share truthful inward judgments, cynicisms, fears, and decisions.

- Political, social, and personal financial status influenced CIO decisions and actions.

- Despite preferences for the status quo, political pressures, or stakeholder interests CIOs were earnestly interested in identifying and correcting IT project implementation problems.

- The CIO selected population was sufficient to capture the breadth of internal organizational factors affecting IT project outcomes.

**Limitations.** Within research, limitations beyond researchers' control exist (Leedy & Ormrod, 2010; M. Simon, 2011; Neuman, 2006; Willis, 2007). A detailed discussion about the mitigation actions appears in this and subsequent chapters. Notably, Chapter 4 presents the data findings and analysis. The Chapter 5 discussion of the findings incorporates theoretical concepts from Chapter 2. The chapters were the means to detail the research limitations and recommend further studies that address the weaknesses (Cone & Foster, 2006; Creswell, 2013; Roberts, 2010). The limitations for the study were:

- The pervasiveness of IT project failures within the private and public sectors did not permit inclusion of the entire affected group.

- CIOs office locations were within various Sacramento-area organizational headquarters. The circumstances may have captured unintentionally regional perspectives and idiosyncrasies not applicable when benchmarking the findings.

- The research timeframe fixed the study era and limited theoretical framework to the four AQAL quadrants.

**Delimitations.** The use of delimitations intentionally constrains the scope (Bloomberg & Volpe, 2008, M. Simon, 2011). Based on the problem, the researcher determines the parameters for included and excluded content. The objective is to ensure the research purpose was researchable. The delimitations for the study were:

- The research included only California state-level public administration organizations.

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- The study examined organizational activities related to IT projects to determine why IT projects failed or succeeded.

- The study was specific to CIOs, AIOs, and project directors responsible for large-scale IT projects.

- Disqualified from the study were California public administration organizations that did not have IT departments.

- The study focused on the internal organizational factors influencing IT project outcomes.

**Research Questions**

The research questions establish the study's thesis (Creswell, 2013; Hsu & Sandford, 2010; Mason, 2010; Seidman, 2006). Within the questions are assumptions about the problem that lead to empirical evidence (Creswell, 2013; Mason, 2010; Seidman, 2006). Subquestions support the thesis and signify the type of data needed, data collection process, and analysis approach (Daymon & Holloway, 2011). For the study, the purpose was to examine through the CIO perspective internal organizational factors that influenced large-scale IT projects using the California's statewide mandated frameworks to determine why IT projects failed or succeeded.

Information about the external context macro factors illustrated in Figure 1 existed within various studies explaining changes related to technology, economics, social, and natural resources (Morgan, 2007; Shane, 2009; Thompson, 2008; Tidd & Bessant, 2009). The research findings were sufficient because the determinants derived from overarching epistemological and ontological changes occurring within the global environment. Similarly, the circumstances defining external micro factors minimized

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further research return in value. California control agencies like the legislature, Department of Technology, Department of Finance, and the Department of General Services develop government codes, policies, and process frameworks for California state organizations' administrative practices. In the recent past, the exception were constitutional officers elected to their positions. Each public officer used his or her discretion to decide on which control agency government code, policies, and process frameworks to follow related to IT projects.

The prospect of developing substantial new data about the specific problem was most promising from within organizations' internal environments (Chua, 2009; Gauld, 2006; Goldfinch, 2007; Willcocks & Margetts, 1993). Common among leadership theory was leaders' responsibility to manage the internal environment through decisions and actions that influenced practices (Chin & Sanchez-Hucles, 2007; Gallos, 2006; Jones, 2010; Yukl, 2013). Thus, the research questions focused on CIOs' IT project experiences as they related to the organizational system including culture, leadership philosophy, structures, strategies, group beliefs, and process norms. The research questions supported an integrative praxis that consisted of the AQAL theoretical framework I, We, It, and Its quadrants. The central research question was:

RQ.  What are California CIOs internal organizational success and failure experiences implementing large-scale IT projects?

The subquestions were:

SQ1. What are the organizational, technical, process, and people-oriented factors that affect California public administration large-scale IT projects success and failure?

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SQ2. How do external factors like CA-PMM, STAR, and CA-PMF frameworks affect internal organizational practices during large-scale IT projects implementation?

SQ3. What is leadership's role during large-scale IT project implementation that influence success or failure?

SQ4. What are the leadership traits and abilities that facilitate successful large-scale IT project outcomes?

**Population**

Information technology project problems are indiscriminate in respect to industry or organizational type (Bloch et al., 2012; Bridgeland & Orszag, 2013; Standish Group, 2013). The large population size prevented an entire group inclusion within the study (Leedy & Ormrod, 2010; Neuman, 2006). The targeting of public administration defined a class of organizations and individuals. However, the category was still broad. Public administration may be defined by international, national, state, and municipalities boundaries. California state-level organizations criteria identified the accessible government level.

**The authorizing organizations.** Within the California's state-level public administration system, approximately 300 organizations exist (Department of Technology, 2014a). A prequalification for study inclusion was the organization had internal resources that performed back-end administrative duties. The responsibilities included project management, human resources, budget management, contracts and procurement, and IT development.

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Another research eligibility consideration was the IT projects orientation. Large-scale IT projects may develop from three authorities including a) internal decision-makers, b) statewide initiatives driven by the State of California decision-makers like the legislature, governor's office, or control agencies, and c) federal agencies that regulate industries, and by extension state organizations like the Department of Transportation. Internal authorization requires a partnership between the IT and lines of businesses leadership and staff. The impetus for projects vary but may include technological investments to improve the infrastructure. Ideally, the organizational culture is infused with a wholistic vision, an intricate governance structure, and efficient but flexible project management approach that includes multiple functional groups. Tantamount to success is strategic priorities negotiated by internal executives. CIOs typically collaborate with the lines of businesses executives who are responsible for managing non-technical program policies like pensions, healthcare, correctional facilities, vehicle registration, and licensing of doctors, dentists, and pharmacists.

Statewide initiatives affect multiple if not all state organizations, and in some cases California municipalities. The state's control agencies are significant stakeholders. Reporting to the Governor's Office, the control agencies are responsible for creating uniformed practices through government codes, policies, standards, and frameworks like CA-PMM and STAR. Control agencies executives authorize large-scale reportable projects that a singular organization must lead like the Department of Finance's new financial management system. The projects are complex as they attempt to overhaul a legacy system and practices throughout the state. Even though control agencies bind California organizations reporting directly to the governor, the relationship with

constitutional officers varies. Until recently, an agreement existed between constitutional officers, boards, or commissions and the control agencies. Executive privilege permitted discretion regarding adherence to control agencies' IT project management directives. However, recent changes marked a significant shift. The government code related to the Department of Technology's STAR framework did not automatically exclude constitutional officers, boards, or commissions from following project management practices. Instead, organizational officials must submit an exemption request to the Department of Technology and legislature on a project-by-project basis.

The last IT project authorization source is federal organizations whose policies may generate large-scale IT projects. Federal organizations affect IT project governance through regulations for several industries including transportation, education, prisons, and environmental protection. Funding for federal-related IT projects is often contained within a law authored at the national level like the Affordable Care Act. The respective state organization's responsibility is to implement the law within the scope and funding determined by Washington, D.C. decision-makers. California organizations non-technical business line designees work with regional overseers who are responsible for ensuring adherence to federal processes and timeframes, which may conflict with California control agencies processes and timeframes. Reconciliation of the differences is the responsibility of California organizational business and IT leaders.

Considering the three types of authorizations, the vast majority of California state small organizations, boards, and commissions were disqualified for this study. In addition, organizations without IT departments were ineligible for the study for obvious reasons. Most state-operated data centers like the Office of Technology Services were

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also ineligible because they are external to the organizations implementing program-related policies. In data centers, business and IT interests do not co-exist. Therefore, 18 organizations were qualified for research consideration.

**The participants.** For the study, the CIO classification included individuals with titles like AIO, deputy director, or project director. Despite the title differences, the role was the organizational executive responsible for the IT department or large-scale IT projects. Focusing on CIOs experiences did not limit the research but recognized several accepted truths about organizational management and public administration leadership dynamics (Bansal, 2009; Boone, 2009; Melitski, Gavin, & Gavin, 2010; Henderson & Venkatraman, 1999; Seung-Won & Kuchinke, 2005). First, CIOs were the nexus between the business and IT strategic objectives. In this role, the individuals helped to determine organizational priorities and readiness to undertake projects (Battaglia, 1991; Cochrane, 2009; Dibrell et al., 2009).

Second, CIOs as directorates were ultimately accountable for IT projects implementation and performance. Public administration remained a top-down decision-making environment (Andersen, 2010; Barcan, 2010; Boin & Hart, 2003; Riccucci, 2010; Shapiro & Rynes, 2005). Governance was through bureaucratic layers with CIOs serving in utmost IT power, authority, and decision-making position. Although research supported sharing authority and team empowerment, the trend did not exist for large-scale projects (Bloch et al., 2012; C. Brown, 1999; Fulk et al., 2013). CIOs often retained decision-making control and authority for the large-scale, politically sensitive IT projects.

Third, CIOs had de facto responsibility to connect processes (de Kluyver & Pearce, 2012; Kuratko et al., 2012; Henderson & Venkatraman, 1999). Without process

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alignment, persistent silos and gaps between functional groups assigned with IT project tasks could persist and adversely affect the outcome. Unlike IT middle managers or project managers, the CIO's concern was broader. CIOs interests were political relationships, strategies, policies, and fiscal accountability besides project implementation (Henderson & Venkatraman, 1999; Obeidat & North, 2014; Shane, 2009). Middle managers' primary interests were specific to the responsibilities assigned to functional boundaries (Ashkenas et al., 2002; Jain & Benyoucef, 2008; Upton et al., 2010). If not connected through cultural or governance norms, IT project resources could encounter process silos. Often, lower-classified project managers' singular focus was project delivery using pre-established processes (Bloch et al., 2012; Obeidat & North, 2014; Rosacker & Rosacker, 2010). In this charge, project managers used frameworks such as CA-PMM, STAR, and CA-PMF to navigate through the organizational white spaces.

Concentration on California public administration state-level CIOs exclusively created research risks. The study population limitation excluded other individuals or groups perspectives that might provide further insight. Research timing was a critical factor to population selection. The bureaucratic system did not permit many opportunities to conduct internal research because of the cautious relationship between public administrators and academia (Andersen, 2010; Pawlowska, 2004; Shapiro & Rynes, 2005). Public administrators continued to view academic studies with suspension (Pawlowska, 2004; Shapiro & Rynes, 2005). Further, political sensitivity about California IT projects could have restricted organizational approval or dissuade middle managers and project managers from participating in the study. The perceived risks were high. The

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collection of additional data from other resources may occur with future studies. Therefore, the research population consisted of current or former California CIOs who either served in statewide public administration organizations that implemented large-scale IT projects. Based on the participant and organizational qualifications, the research population was reduced to 20 eligible candidates.

**Sampling Frame**

A decision criterion in selecting the sampling frame within narrative studies was the degree by which the situation could be described completely (Creswell, 2013; Guest, Bunce, & Johnson, 2006; Martin, 2000; Mason, 2010). Selection by gender, age, or race was inconsequential. Also less important was the random selection of participants. The research design identified the business sector, participants' role, and research focus (Creswell, 2013; Kolb, 2008; Moustakas, 1994).

The targeted CIO sample size was significantly fewer than the 125 positions after accounting for vacancies, individuals holding multiple positions, and design structures that disqualified organizations from inclusion (Department of Technology, 2014a). Thus, outreach was to 20 current or former CIOs. The Department of Technology provided a list of eligible participants. As with many private and public sector organizations, experienced professionals were retiring at a high-rate so a contingency plan existed. If the study group was incomplete after contacting the currently employed CIOs, consideration of additional participants from the retired population was an option. The selection process would continue until achieving the sample size goal or the eligibility list was exhausted. If less than 10 CIOs agreed to participate but the sample size included at least five individuals, the research continued because the number of participants will have

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increased from prior studies that had zero or 1 participants for an average of 1.5 participants. Details about the recruitment process follows (see Appendix B).

**Recruitment process**. Research participants were identified from the Department of Technology list of CIOs. The URL for accessing the list was http://www.cio.ca.gov/Government/It_Directory.html. Under the heading "California IT Directory". The researcher selected the fourth bullet labeled "State AIO/CIO List (PDF) Updated October 2016".  An alternate means to access the list was to perform a Google search using the words "California CIOs List". The researcher selected the result titled "Information Technology Directory – California Department of Technology". The query directed the user to the aforementioned webpage (http://www.cio.ca.gov/Government/It_Directory.html). Under the heading "California IT Directory". The researcher selected the fourth bullet labeled "State AIO/CIO List (PDF) Updated October 2016".

Although the Department of Technology list did not include the CIOs' contact information, several options were available to obtain the information. From public information or follow-up calls to the organizations, the researcher confirmed the CIOs' email address, physical address, and telephone number. The first procedure to access CIO's department information through the public California Online Directory Employee Information – State of California at www.cold.ca.gov/state_employees.asp. Using the Quick Links *Agency Information*, the researcher clicked, and then selected the organization. From there, the researcher scrolled until the organizational name was located. The specific organizational list opened with a list of officials. The researcher scrolled until the CIO's name appeared. The second procedure was to access specific CIO

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information through the public California Online Directory Employee Information – State of California at www.cold.ca.gov/state_employees.asp. Using the Quick Links *Employee Information*, the researcher clicked, and then typed the CIO's name when prompted. A third optional procedure performed a Google search by the CIOs' or agency name. The researcher selected the appropriate search result. Finally, the last optional procedure performed was a Google search by the organizational name. The query led the researcher to the organization's webpage. The researcher located the "About Us" link within the top banner and selected the "Contact Information". The information provided the organizational address and main telephone number.

*Permission to recruit and use a neutral location.* Past research practices when executive-level individuals like CIOs were the focus of studies, exempted the researcher from obtaining a premises, recruitment, and name use permission (PRN) form. However, recent University of Phoenix Institutional Review Board research policy changes required a PRN to recruit CIOs. The State of California's Department of Technology CIO on behalf of the all participants granted permission to recruit for the research (see Appendix C). Another PRN from the University of Southern California granted permission to use the university's State Capital Center premises to conduct the interviews (see Appendix C).

*Letter of introduction*. The initial 20 CIO recruits received an email with the letter of introduction language, which explained the research purpose, researcher's university affiliation, participant eligibility criteria, participant's research time commitments, research location, and the researcher's contact information (see Appendix D). Although planned, a follow-up mailer using the United States Postal services was

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unnecessary because the recruitment participation goal was achieved. The language within the emailed letter of introduction would have been converted into a formal letter and mailed in an envelope marked *confidential*. Instead, a follow-up call by the researcher within five business days from the email sent date proved sufficient to confirm 10 CIOs participation in the study.

*Contact after participant accepted research invitation*. Once the CIOs agreed to participate in the study and an interview was scheduled, the researcher provided via a secure email account the informed consent (see Appendix A), biographic questionnaire (see Appendix E), and interview questions (see Appendix F). A Microsoft Office private calendar meeting was sent to the participant with the interview date, time, location, and parking instructions. The day prior to the interview, a secure email from the secure email account was sent reminding the participant of the interview date, time, location, and parking instructions. All communications included the researcher's contact information.

## Informed Consent

The norms established by the Belmont Report emphasized the need to follow ethical principles when conducting research on human subjects (National Commission, 1979). In an effort to balance research benefits and historical abuses, the basic principles instructed researchers in three areas: respect of persons, beneficence, and justice. Analysis of the importance and applicability of each principle in relation to the study follows.

**Respect of persons**. The first of the two principles regarding respect of persons is the treatment of individuals' autonomy (National Commission, 1979). Empowered individuals make decisions regarding research participation. In addition, respecting

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participants' observations, judgments, thoughts, feelings, beliefs, and behaviors is tantamount during research (Connor & Becker, 1977; Erisen et al., 2014; Hewstone et al., 2002; McKnight, 2011; Rozin & Royzman, 2001; Weisbuch & Pauker, 2011; Wilholt, 2009). For the study, adhering to this fundamental principle by being accepting of and transparent with the imparted information valued the participants' experiences and perspectives, which increased the study's value.

The second principle concerns protecting individuals with diminished cognitive capacity (National Commission, 1979). The intent is to ensure individuals can make decisions regarding voluntary participation. Researchers should note that age or mental state might decrease autonomy. If individuals cannot demonstrate the faculty to participate, researchers should refrain from including the individuals in the study. For the study, respect of persons entailed participants possessing a keen awareness about the research potential political ramifications. Disclosure of participants' identity could cause career and psychological harm if controversial statements were traceable to a specific individual. Sufficient security measures were implemented. For the study, although the California Department of Technology's CIO and chief deputy were aware of the study activity, the researcher was the lone person with knowledge about who was contacted and who accepted the invitation. Other measures to ensure study security included the assigning a confidential code to each participant, maintaining participant identities in a separate location from the recordings and transcripts, and barring access to the raw research material. The offsite interviews occurred at a facility with limited access.

**Beneficence**. The Belmont Report instructed researchers to treat participants in an ethical manner (National Commission, 1979). This obligated the researcher to ensure

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individuals well-being. The research objectives are to do no harm and maximize benefits while minimizing possible harm (Connor & Becker, 1977; Erisen et al., 2014; Hewstone et al., 2002; McKnight, 2011; Rozin & Royzman, 2001; Weisbuch & Pauker, 2011; Wilholt, 2009). For the study, the research value was dependent on the CIOs' candor, which may have political and career-ending implications. Ensuring participants' well-being entailed minimizing anxiety and uncertainties about the study's intent. The adopted actions included sharing the questions prior to the interview, being transparent about the data collection and analysis process, and discussing the future publishing of the dissertation. Information imparted in writing and through discussions was straightforward. Timely responses to participants' questions was critical in demonstrating the researcher's availability and interest in making the interviews a collaborative effort. The researcher explained to the participants that any identifiable information including organizational and project names would be redacted. As such, the participants received his or her interview transcript in a Microsoft Word document with the pending redacted information highlighted. The offsite interview facility provided easy but private access and aesthetic accommodations like refreshments for the 90-minute interview.

**Justice**. The justice principle concerns distribution fairness among equals (National Commission, 1979). Justice is important for two reasons. First, the potential study findings may be of interest to the general public, politicians, public administrators, business industries, and scholars. Second, each group's access to the research must be as equals. Distributing the findings to just one group violates the principle of justice. The study's findings will be a public document available through the United States' Library of Congress and the California State Library.

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Awareness about potential conflict among the three principles because of the equality among the moral forces was paramount (National Commission, 1979). Each principle was upheld for this study by considering each within the research purpose context. Tension among the three principles did not occur. If conflict had arisen, the researcher would have provided sufficient justification to University of Phoenix Institutional Review Board requesting permission to adhere to one principle over another.

The Belmont Report stated to minimize the potential violation of respect of persons, beneficence, and justice principles the researcher should provide an informed consent (National Commission, 1979). Considering the research topic where many opinions co-exist and create tension, an informed consent was imperative. The agreement provided a binding agreement about expectations and behavior between the researcher and participants. The informed consent (see Appendix A) included three sections. The first section contained language that detailed the study's purpose and procedure (National Commission, 1979). The full disclosure was necessary to allow potential participants the opportunity to make informed decisions. The agreement stated clearly the benefits, risks, and assurance participation was voluntary. The second section was participants' acknowledgement the researcher provided the disclosure (National Commission, 1979). The informed consent explained individuals could withdraw from the study at any time. Ensuring comprehension of the study scope and potential personal impact honored participants' autonomy. The third section included a statement regarding voluntary participation (National Commission, 1979). The language explained participants' withdrawal process without negative consequences, harm, or coercion (National Commission, 1979).

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The informed consent was emailed after CIOs received a letter of introduction (see Appendix A) and agreed to participate in the study. The participants had sufficient time to review the informed consent form and ask questions prior to the scheduled interview. Other measures to protect the study integrity included the researcher's ethical training through the Collaborative Institutional Training Initiative and research oversight by University of Phoenix Institutional Review Board.

**Confidentiality**

The conflict between reporting research findings and maintaining participants' confidentiality was a concern (Creswell, 2013; Kaiser, 2009; National Commission, 1979). Although specific comments are not traceable to an individual, the population may become the focus of undue speculation if the findings result in controversy. Adhering to the Belmont Report principle to protect the well-being of subjects, participants' recruitment contained appropriate provisions to protect the identities of individual participants.

Considering the candor needed to collect sensitive information from CIOs, separate in-person interviews between the participant and researcher was scheduled (Creswell, 2013; Guest et al., 2006; Hsu & Sandford, 2010; Martin, 2000). Measures to protect individuals' identity included the issuance of a confidential code to each participant from the researcher. The control number and list of names that conceal all participant identities is stored in a bank safe deposit box in Los Angeles, California. The researcher is the key holder. The audio recordings along with a log mapping the recordings to participants' control numbers, and transcripts are stored in separate locations in Sacramento, California. The digital audio recordings have the automated

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numbers generated from the equipment and are stored in a secure private office safe that is accessible only to the researcher. The recording transcripts and audio mapping log are maintained in separate files on a secure and encrypted personal computer (PC). The privately-owned PC is not shared or accessed through a computing network, i.e., University of Phoenix. The PC is protected by up-to-date internet security and antivirus software. Finally, the researcher used a reputable encrypted email system to communicate with participants.

Per academic research standards, the study artifacts will adhere to a three-year retention policy. The protocol ensures the researcher is accountable and a responsible steward of research data and artifacts. The researcher will erase the audio recordings at the end of the three-year retention period. The researcher will submit the erased audio recordings along with all other material to a reputable confidential destruction company like Iron Mountain (http://www.ironmountain.com) to destroy. Finally, to ensure confidentiality, third parties did not have access to the control number list or audio mapping log that disclose participants' identification.

**Geographic Location**

IT project failures are universal (Boyd, 2008; Davis & Baxandall, 2014; Franken et al., 2009; Fulk et al., 2013; McLaughlin, 2009; Sharma & Sharma, 2010; Standish Group, 2013). Considering the study's research purpose, the scope was limited to California. The targeted CIO public administration population worked within offices in or near the state capitol. Therefore, Sacramento, California was the geographical location.

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**Data Collection**

Narrative studies permit the collection of real-world experiences as they happen or shortly thereafter (Creswell, 2013; Hsu & Sandford, 2010; Martin, 2000; Mason, 2010; Seidman, 2006). The two data collection techniques are narrative analysis and analysis of narratives. The narrative analysis results in the story as the outcome. Researchers write the stories using participants' descriptions about events or situations (Seidman, 2006). Analysis of narratives uses themes as the outcome (Seidman, 2006). The study on California CIOs experiences with IT projects failures and successes used the second technique. Successive and interrelated processes beginning with recruitment through data collection enhanced the data analysis.

Semi-structured questions elicited CIOs comments about internal organizational experiences during separate in-person interviews. The 90-minute interviews were conducted at a neutral location and no follow-up interviews were required. The researcher used audio digital and tape recorders along with written notes during the interviews to collect oral history data.

The researcher transcribed the interviews using the audio recordings and written notes (see Appendix G). Each Microsoft Word rich text formatted transcript included the participant's confidential code, interview date and time, and research title. The transcripts followed a rich text format that included speaker identification as either *I* for researcher or *P* for participant.

Once transcribed, each participant received his or her transcript from the researcher using a secured email account with the Microsoft Word document attached and instructions for review and return. The participant reviewed his or her transcript to

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ensure the faithful representation of responses. The participant was instructed to return the transcript acceptance email message or submitted edits to the researcher through the same secured email account (see Appendix H). After all participants accepted his or her transcript, the researcher inputted the unstructured text data into QSR NVivo software to conduct data analysis.

The audio recordings along with a log mapping the recordings to participants' confidential codes, and transcripts are stored in separate Sacramento, California locations. The digital audio recordings, identifiable by the automated numbers generated from the equipment, are stored in a secure private office safe that is accessible only to the researcher. The physical tape recordings with the participants' confidential code, and interview date and time are stored in the same location as the digital recorder. The recording transcripts and audio mapping log are maintained in separate files on a secure and encrypted PC. The PC is not shared or accessed through a computing network, i.e., University of Phoenix. The PC is protected by up-to-date internet security and antivirus software. Finally, to ensure confidentiality, third parties did not have access to the confidential code list and audio mapping log that disclosed participants' identification.

Per academic research standards, the study artifacts adhere to a three-year retention policy. The protocol ensures the researcher is accountable and a responsible steward of research data and artifacts. The researcher will erase the audio digital and tape recordings at the end of the three-year retention period. The researcher will submit the erased recording digital device and tapes along with all other research artifacts to a reputable confidential destruction company like Iron Mountain (http://www.ironmountain.com) to destroy.

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**Instrumentation**

Human subjects are the primary focus in qualitative narrative studies (Creswell, 2013; Joubish, Khurram, Ahmed, Fatima, & Haider, 2011; Martin, 2000; Mason, 2010; Seidman, 2006). Considering the candor needed to collect sensitive information from CIOs, separate in-person interviews were the appropriate research mode (Creswell, 2013; Guest et al., 2006; Hsu & Sandford, 2010; Martin, 2000; Seidman, 2006). Confidentiality was essential. The data collection and maintenance procedures described in the preceding sections protected participants' identities. The researcher assigned a confidential code for each participant. In addition, three separate resources store the confidential code list, audio recordings, audio recording mapping log, and the coded transcripts.

The research validity is dependent on the instrumentation (Creswell, 2013; Martin, 2000; Mason, 2010; Seidman, 2006). Semi-structured interviews use open-ended questions to examine the unknown. The interview questions guide the discussions and permit elaboration (Creswell, 2013; Hsu & Sandford, 2010; Martin, 2000). A three-phase technique is useful for narrative data triangulation (Seidman, 2006). Phase one focuses on placing experiences in context of the participants' life stories. The questionnaire inquires about career histories, education, and training. The reconstruction of experiences is the second narrative interview phase (Seidman, 2006). Interview questions ask about decisions made and actions performed. Opinions about the work are out of scope. The third phase collects reflective data about the meaning of the participants' experiences (Seidman, 2006). The objective is to examine how participants make sense of the experiences.

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Qualitative studies permit revision or creation of new interview questions if the need arises as long as the fundamental research questions are unchanged (Creswell, 2013; Martin, 2000; Mason, 2010; Seidman, 2006). For the study, there were no changes to the 10 structured questions that aligned with the problem statement, purpose statement, and research design. Participants answered each question as originally written. Unstructured but open-ended questions developed based on participants' responses. The follow-up questions clarified participant's responses. In some instances, the same unstructured question was asked as a follow-up in multiple interviews but always under the aforementioned circumstances.

**Phase one interview.** Participants' response to a biographic questionnaire sent prior to the second phase in-person interview served as the primary means to collect phase one data (see Appendix E). During the course of the interview and especially during the first interview question, biographic information was discussed. The objective was to collect data that placed in context phase two responses. After a CIO accepted the invitation to participate, he or she received the biographic questionnaire along with instructions for completion via the researcher's secured email account prior to the in-person interview.

**Phase two and three interview.** During the interview, participants answered questions about his or her IT project implementation experiences (see Appendix F). Semi-structured and open-ended questions guided the discussions. After a CIO accepted the invitation to participate, he or she received the interview questions along with instructions for preparing for the interview via the researcher's secured email account

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prior to the interview date. The interview process followed the following general steps (see Appendix I).

Step one, the researcher wrote onto the audio tape, informed consent, returned biographic questionnaire, and notebook designated for the interview the research title, interview date and time, and the participant's confidential code. As spoken by the researcher, the digital recorder captured the research title, interview date and time, and the participant's confidential code. Step two, the researcher began each interview with a statement concerning the measures undertaken to protect the participant's confidentiality. Actions included scheduling separate interviews, using an offsite and neutral interview location, and assigning a confidential code to each participant. Step three, the researcher asked each participant if he or she had any questions. If questions were asked, a discussion ensued. Step four, the researcher asked an introductory icebreaker about what technology innovation made the most impact on the participant's life. A brief discussion ensued.

The formal interview began with the fifth step. The researcher asked each participant the 10 semi-structured interview questions. Step six, as appropriate, the researcher asked follow-up open-ended questions to clarify or gain further insight into the participant's responses. Step seven, after the questions were completed, the researcher asked each participant if he or she had any questions or wanted to provide further comments. If the participant continued commenting, then steps six and seven were repeated until the participant had no further questions or responses. Step eight, the researcher provided a projected timeline for transcribing the interview recording and emailing the Microsoft Word document to the participant. Included in this overview was

instructions to the participant for reviewing, editing, and accepting the transcripts via a secure email account. During the ninth step, the researcher provided to the participant an overview of the research process next steps including data coding, findings analysis, and publishing the dissertation.

The tenth step initiated the interview conclusion. The researcher restated the measures undertaken to protect the participant's confidentiality. Step eleven was the researcher thank you to the participant. The researcher expressed appreciation for the participant's interest, time, and candor. Finally, the interview concluded.

**Participant Interview Questions**

Qualitative narrative study design uses open-ended interview questions as a basic mode of inquiry (Creswell, 2013; Guest et al., 2006; Hsu & Sandford, 2010; Martin, 2000; Seidman, 2006). The testing of theory or obtaining answers is not the objective. Research interviews develop insight into participants' experiences. The interview interest is collecting data about how the participant perceives an experience.

The examination, through the CIO perspective, was internal organizational factors that influenced IT projects using the California's statewide mandated frameworks to determine why IT projects failed or succeeded. Despite the frequent occurrence of risk factors, the inner context including content and processes was the least studied because of situational uniqueness (Gauld, 2006; Goldfinch, 2007; Willcocks & Margetts, 1993). The three-phase approach collected biographical, experiential, and reflective data. Incorporated into the first phase were a biographic questionnaire and follow-up questions during the in-person interview. The questions in phase two focused on work experiences. Finally, phase three collected reflective data about the meaning of the participants'

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experiences. Figure 3 illustrates the projected relationships among the AQAL theoretical framework, research questions, and interview questions.

| | INTERIOR | EXTERIOR |
|---|---|---|
| **INDIVIDUAL** | **AQAL *I* Quadrant**<br><br>What I Experience: Leadership perceptions, values, beliefs, norms<br><br>Research Questions: RQ, SQ1, SQ3, SQ4<br><br>Interview Questions:<br>Phase 1 – Demographic Questionnaire<br>Phase 2 – 1, 2, 3<br>Phase 3 – 4 | **AQAL *It* Quadrant**<br><br>What I Do: Organizational philosophy/strategy, organizational management style, quality control<br><br>Research Questions: RQ, SQ1, SQ2, SQ3, SQ4<br><br>Interview Questions:<br>Phase 2 – 7 & 8<br>Phase 3 – 9 (same as question 4) |
| **COLLECTIVE** | **AQAL *We* Quadrant**<br><br>What We Experience: Social culture, shared values/beliefs/norms, relationships<br><br>Research Questions: RQ, SQ1, SQ3, SQ4<br><br>Interview Questions:<br>Phase 2 – 5 & 6 | **AQAL *Its* Quadrant**<br><br>What We Do: Governance institutions, operational realities, rules, regulations, visible structures/processes<br><br>Research Questions: RQ, SQ1, SQ2<br><br>Interview Questions:<br>Phase 2 – 10 & 11 |

*Figure 6*. Interview questions relationship to AQAL. The figure illustrates how the interview questions map to the theoretical framework.

**I quadrant**. The CIOs experiences, as a leader was the focus within this AQAL quadrant. Individual perspectives provided insight into personal values, beliefs, will, and emotions. The information provided a basis for understanding responses to questions related to the We, It, and Its quadrants. The interview questions asked in phases one and two aligned with the following research questions:

RQ. What are California CIOs internal organizational success or failure experiences implementing large-scale IT projects?

SQ1. What are the organizational, technical, process, and people-oriented factors that affect California public administration large-scale IT projects success or failure?

SQ3. What is leadership's role during large-scale IT project implementation that influence success or failure?

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SQ4. What are the leadership traits and abilities that facilitate successful large-

scale IT project outcomes?

The first phase questions collected from the biographic questionnaire were:

1. What is the city and state that you resided in until high school graduation?

2. Do you reside in one of the following counties: Sacramento, San Joaquin,

   Solano, Yolo, Sutter, Yuba, Placer, Nevada, El Dorado, Amador, or Calaveras

   counties? If yes, which one?

3. Did you attend college? If yes, where? What was your major?

4. Did your degree program include leadership, business management, or public

   administration coursework?

5. Do you have formal project management training or certification, i.e., Project

   Management Professional, Department of Technology, or third-party

   provider? Please specify.

6. Within your State of California employment, did you promote within the IT

   classification ranks to achieve your current position? If yes, how many years

   did it take to achieve your current position level?

7. How long have you served in your current position?

8. How many years of executive management or leadership experience do you

   have?

9. How many years of experience directing State of California information

   technology projects?

The phase two in-person interview questions were:

1. Tell me about your background in leading IT projects.

2. Please describe for me the leadership traits that you found most or least beneficial for implementing IT projects?

3. Based on your experience, what made IT projects fail or succeed?

The phase three in-person interview question was:

4. What is the lesson learned about California's large-scale IT projects based on your experience, education, and training?

**We quadrant**. Organizational experiences and relationships were the focus within this AQAL quadrant. CIOs were asked about the social culture that established shared values, beliefs, and norms through relationships. The information provided insight into how the internal culture influences group organizational behavior and systems. The second phase interview questions aligned with the following research questions:

RQ. What are California CIOs internal organizational success or failure experiences implementing large-scale IT projects?

SQ1. What are the organizational, technical, process, and people-oriented factors that affect California public administration large-scale IT projects success of failure?

SQ3. What is leadership's role during large-scale IT project implementation that influence success or failure?

SQ4. What are the leadership traits and abilities that facilitate successful large-scale IT project outcomes?

The phase two in-person interview questions were:

5. Please describe how individuals within functional groups participate in IT projects that leads to success or failure?

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6. Complete this sentence, if an IT project has problems the project team and organizational response is *x*.

**It quadrant.** What CIOs do as organizational proxies was the focus within this AQAL quadrant. The questions focused on organizational skills, strategies, management style, and quality control measures that influence IT projects outcomes. The information provided insight into the alignment between business and IT strategies and organizational culture. The second phase interview questions aligned with the following research questions:

RQ. What are California CIOs internal organizational success or failure experiences implementing large-scale IT projects?

SQ1. What are the organizational, technical, process, and people-oriented factors that affect California public administration large-scale IT projects success or failure?

SQ2. How do external factors like CA-PMM, STAR, and CA-PMF frameworks affect internal organizational practices during large-scale IT projects implementation?

SQ3. What is leadership's role during large-scale IT project implementation that influence success or failure?

SQ4. What are the leadership traits and abilities that facilitate successful large-scale IT project outcomes?

The phase two in-person interview questions were:

7. Please tell me as much as possible about the organizational strategic perspective that establishes priorities and influence success or failure?

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8. Walk me through your organization's IT project governance process that provides the foundation for success or failure?

The phase three in-person interview question was the same as question four:

9. What is the lesson learned about California's large-scale IT projects based on your experience, education, and training?

**Its quadrant**. What organizations do was the focus within this AQAL quadrant. Questions inquired about institutional systems, structures, and activities. The processes and tools used to implement IT projects were the focus. The second phase interview questions aligned with the following research questions:

RQ. What are California CIOs internal organizational success or failure experiences implementing large-scale IT projects?

SQ1. What are the organizational, technical, process, and people-oriented factors that affect California public administration large-scale IT projects success or failure?

SQ2. How do external factors like CA-PMM, STAR, and CA-PMF frameworks affect internal organizational practices during large-scale IT projects implementation?

The phase two in-person interview questions were:

10. What is your organization's IT project implementation process?

11. How is CA-PMM, STAR, and CA-PMF frameworks integrated into your internal processes?

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**Validity and Reliability**

Within qualitative studies, the verification of research validity and reliability is trustworthiness (Creswell, 2013; Leedy & Ormrod, 2010; Lincoln & Guba, 1985; Shenton, 2004; Willis, 2007). The research intention is to present replicable objective, accurate, and detailed findings (Creswell, 2013; Shenton, 2004; Yin, 2012, 2014). For the study, establishing trustworthiness required proof of four measures.

First, credibility is equivalent to research truth (Creswell, 2013; Leedy & Ormrod, 2010; Lincoln & Guba, 1985; Shenton, 2004; Willis, 2007). Corresponding with the Belmont Report, credibility depended on a fair research approach. The techniques that established credibility included appropriate population saturation, data triangulation from multiple resources, and peer reviews (Lincoln & Guba, 1985; Seidman, 2006).

The second measure was transferability, which is the ability to apply findings to other organizational types or industries (Creswell, 2013; Leedy & Ormrod, 2010; Lincoln & Guba, 1985; Shenton, 2004; Willis, 2007). Considering the interconnectedness of data and information in the global economy, the ability to benchmark findings validated the applicability of the study. Detailed descriptions provided information about the research application for different government types, industries, business sectors, and geographical locations like local, federal, and international governments (Lincoln & Guba, 1985).

Dependability was the third validity and reliability measure (Creswell, 2013; Leedy & Ormrod, 2010; Lincoln & Guba, 1985; Shenton, 2004; Willis, 2007). The objectives were maintaining data consistency and the ability to replicate the study. Qualitative interviews are subjective. The inclusion of background data about the participants and environment was essential for framing the data context (Lincoln & Guba,

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1985; Shenton, 2004). Besides the previous techniques, an external audit confirmed the data supported the findings (Lincoln & Guba, 1985).

The fourth validity and reliability measure was confirmability, which concerned sources of bias (Creswell, 2013; Leedy; 2010; Lincoln & Guba, 1985; Willis, 2007). Adherence to a disciplined research approach relied on self-regulation by the researcher. Training by the Collaborative Institutional Training Initiative and University of Phoenix minimized this probability. Personal bias or self-interest did not prejudice the findings (Connor & Becker, 1977; Erisen et al., 2014; Hewstone et al., 2002; McKnight, 2011; Rozin & Royzman, 2001; Weisbuch & Pauker, 2011; Wilholt, 2009). However, if additional external audits are conducted and indicate bias existed, it should be traceable directly to the interview participants and not the researcher (Lincoln & Guba, 1985).

**Internal validity**. Internal validity is the capacity to capture accurately the data (Creswell, 2013; Leedy & Ormrod, 2010; Lincoln & Guba, 1985; Shenton, 2004; Willis, 2007). The authenticity and rigor of the research ensures the data and findings are trustworthy (Creswell, 2013; Lincoln & Guba, 1985). The study's internal validity used two measures. First, process discipline required an appropriate and aligned research design, process, and defined verification measures. The second internal validity measurement was the assurance any changes in the dependent variable was the by-product of an independent variable. Internal validity occurred with the adherence to appropriate research practices as discussed throughout Chapter 3. Further, due diligence by the researcher ensured personal bias, feelings, and thoughts did not lead to intentional or unintentional transcription of participants' responses (Connor & Becker, 1977; Erisen

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et al., 2014; Hewstone et al., 2002; McKnight, 2011; Rozin & Royzman, 2001; Weisbuch & Pauker, 2011; Wilholt, 2009).

**External validity**. The ability to generalize the findings establishes external validity (Creswell, 2013; Leedy & Ormrod, 2010; Lincoln & Guba, 1985; Shenton, 2004; Willis, 2007). Findings about California CIOs experiences were transferable to the various public administration levels including international, federal, other states, and municipalities because of similar problems implementing IT projects. Another benchmarking opportunity was examining organizational design and leadership within private sector organizations with bureaucratic environments.

**Reliability**. Reliability concerns data quality and accuracy to produce consistent results through triangulation (Creswell, 2013; Leedy & Ormrod, 2010; Lincoln & Guba, 1985; Shenton, 2004; Willis, 2007). Critical to this measurement is the integrity of the research approach like the interview instrument. At minimum, the procedures adopted for this study were a unit of analysis, coding definitions, and interview transcripts.

Unit of analysis identified the measurement used to collect and analyze data (Creswell, 2013; Leedy & Ormrod, 2010; Lincoln & Guba, 1985; Shenton, 2004; Willis, 2007). For the study, the unit of measurement was CIOs' experiences related to large-scale IT project implementation. Qualitative research best practices permit the inclusion of emerging data unidentified at the study's onset. Other data collected during follow-up interview questions was analyzed and incorporated into the study as determined by the research relevancy.

Coding definitions develop as the collected data is sorted, categorized, and analyzed by the researcher (Creswell, 2013; Leedy & Ormrod, 2010; Lincoln & Guba,

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1985; Shenton, 2004; Willis, 2007). A comparison of coded data to notes, definitions, and non-coded data by the researcher using QSR NVivo software occurred to avoid inconsistencies. The definitions are subject to an audit and peer review if applicable.

Transcripts underwent several reviews by the researcher using the audio recordings and written notes. Further, each participant reviewed his or her interview transcripts to ensure the fair representation of responses. The thorough reviews by participants and the researcher decreased the risk of error or unsupported inferences.

**Data Analysis**

Data analysis requires the consistent logical deductive or inductive reasoning to assess the collected data (Creswell, 2013; Leedy & Ormrod, 2010; Neuman, 2006; Stake, 2006; Willis, 2007). The analysis of the narrative technique was adopted to assess collected stories. The process began after all participants accepted his or her interview transcripts. Introduced into this research phase was the QSR NVivo software to assist with analysis. The software enabled mapping of unstructured data obtained from the interviews. Along with the AQAL theoretical framework, QSR NVivo provided the means to organize the data by classifying and sorting responses into major analysis categories (Gregory, Armenakis, Moates, Albritton, & Harris, 2007; Stake, 2006). Although there is no consensus among researchers concerning the appropriate singular protocol for the detailed data analysis, similar steps exist among the qualitative research designs (Creswell, 2013; Leedy & Ormrod, 2010; Neuman, 2006; Seidman, 2006; Stake, 2006; Willis, 2007). The repeatable steps were:

1. The researcher reviewed the transcripts individually to obtain a first-time impression and detailed impression of each transcript.

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2. The researcher reviewed the transcripts as a group based on the research question that was: What are California CIOs internal organizational success or failure experiences implementing large-scale IT projects?

3. The research question served as the NVivo software parent node.

4. The researcher developed preliminary secondary codes based on repeated words or phrases relevant to the research subquestions and Wilber's (2000a, 2000b) AQAL quadrants theoretical framework. The secondary nodes were I, We, It, and Its quadrants.

5. The researcher inputted the preliminary codes and transcript data into the NVivo software.

6. The CIOs responses to the 10 open-ended structured and various follow-up interview questions were classified within the NVivo software accordingly.

7. An iterative analysis process resulted in the combination, elimination, or creation of new nodes and themes.

8. The researcher finalized the data categories and confirmed themes using Microsoft Word.

9. The researcher used Microsoft Word to write research results that discussed findings.

**Summary**

The qualitative narrative study design was an appropriate research approach to examine through the CIO perspective internal organizational factors that influenced large-scale IT projects using the California's statewide mandated frameworks to determine why IT projects failed or succeeded. The politically sensitive nature of the

research required confidentiality to elicit candid comments from CIOs. Research quality was maintained through a disciplined research approach that foremost respected participants as (a) as autonomous agents, (b) in an ethical manner, and (c) in the spirit of fairness (National Commission, 1979).

Narrative studies produce descriptive but unstructured data about real world experiences (Creswell, 2013; Di Pofi, 2002; Leedy & Ormond, 2010; Neuman, 2006; Yin, 2012, 2014). The research design requires process consistency to collect and analyze in-person interview data. The study's purpose statement identified the population, sample size, and geographic location as Sacramento, California based state-level CIOs. The data collection and analysis processes enabled the identification of descriptive themes about California CIO experiences implementing large-scale IT projects as hypothesized in the research questions.

Chapter 4

Analysis and Results

The purpose of this qualitative narrative study was to examine through the CIO perspective internal organizational factors that influenced large-scale IT projects using the California's statewide mandated frameworks to determine why IT projects failed or succeeded. The purpose was not to research why a specific IT project performed poorly. Instead, the objective was to examine internal organizational cultures and practices within public administration that affected IT project outcomes.

After an outreach to 20 California state-level CIOs, AIOs, deputy directors, and project directors, 10 individuals agreed to in-person interviews conducted by the researcher. However, as a result of a state emergency, one participant became unavailable the day of the scheduled interview. Calendar conflicts between the participant and researcher prevented rescheduling the interview during the research timeframe. Therefore, a total of nine (9) CIOs participated in the study.

The research question that established the thesis and guided the study was: What are California CIOs internal organizational success or failure experiences implementing large-scale IT projects? Despite general awareness about IT project difficulties among organizational leaders from the public and private sectors, the problem with IT projects failure continues at a high rate (Boyd, 2008; Franken et al., 2009; Fulk et al., 2013; Sharma & Sharma, 2010; Standish Group, 2013). The specific California problem was the adopted state frameworks had not reduced or eliminated the problem. The separate interviews with the CIOs developed a knowledge base about the internal organizational factors that contributed to California's IT projects successes or failures. Several research

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subquestions supported the thesis and identified the in-depth data needed for empirical evidence. The first subquestion was: What are the organizational, technical, process, and people-oriented factors that affect California public administration large-scale IT project success or failure? The second subquestion was: How do external factors like CA-PMM, STAR and CA-PMF frameworks affect internal organizational practices during large-scale IT projects implementation? The third subquestion was: What is leadership's role during large-scale IT project implementation that influence success or failure? Finally, the fourth subquestion was: What are the leadership traits and abilities that facilitate successful large-scale IT project outcomes?

The data findings within the chapter separately and as a whole addressed the research question and subquestions. Within Chapter 4 is information about the data collection process, the confidential coding procedure, participants' demographics, and a description of the data analysis process. Wilber's (2000a, 2000b) AQAL theoretical framework consisting of I, We, It, and Its quadrants assisted in organizing the unstructured narrative data to identify themes. Some of the 14 themes were (a) experienced IT project leadership improved outcomes but was rare, (b) normative leadership traits were deemed as beneficial, (c) sponsorship buy-in was critical to IT project success, (d) vendor roles, relationships, and power created tension, (e) organizational denial about IT project health existed, and (f) statewide frameworks had unknown effect on IT project outcomes.

**Data Collection**

Beyond mere data processing, narrative studies permit the collection of real-world experiences as they happen or shortly thereafter (Creswell, 2013; Hsu & Sandford, 2010;

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Martin, 2000; Mason, 2010; Seidman, 2006). A study imperative was CIOs' knowledge

and experiences related to IT projects. Thus, data analysis depended on successive

interrelated processes beginning with participants' recruitment through the data collection

process (Seidman, 2006).

**Recruitment process**. Research participants were identified from the Department

of Technology list of CIOs. Chapter 3 contains further details about the outreach. A

means to ensure the most qualified CIOs were contacted, the researcher developed

organizational and individual selection criteria. The two-step process entailed analyzing

first the organization and second eligible individuals. Chapters 1 and 3 provide detailed

information about the population selection logic. Table 7 summarizes the criteria.

Table 7

*Participants Selection Criteria*

| Organizations | Individuals |
| --- | --- |
| • California state-level public administration organization. | • Individual experience directing large-scale IT projects within a State of California organization. |
| • Organization has internal resources that performed back-end administrative duties. | • The participant must serve or have served as a CIO, AIO, deputy director, or project director. |
| • Implement large-scale IT projects authorized by internal, California state, or federal decision-makers. | • The participants could be a current or retired CIOs, AIOs, deputy directors or project directors. |
| • The organization must have an internal IT department. | |
| • IT and non-IT business functions coexist within the organization | |
| • Organization is not a stand-alone data center. | |

*Note*. Complied from Chapter 1 and 3 discussion of participants' qualifications.

**Interview process**. The researcher conducted separate in-person interviews with

nine CIOs to collect the narrative data. The 90-minute discussions occurred at the

University of Southern California's State Capital Center in Sacramento, California

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between January 24, 2017 through February 23, 2017. The researcher used digital and

tape audio recorders along with written notes to capture the data. Chapter 3 details the

specific interview process steps diagramed in Figure 7.
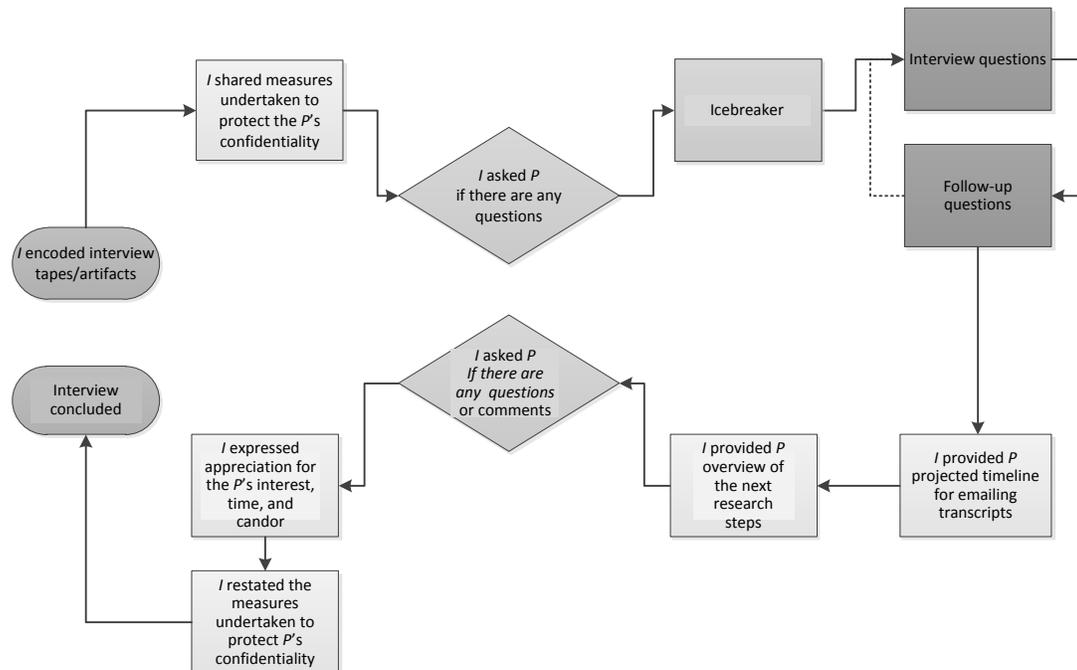


*Figure 7*. CIO interview process. The figure illustrates the workflow steps implemented
during the interview process.

**Recording transcription process**. The researcher transcribed the digitally

recorded interviews (see Appendix G). The tapes from the second recorder and researcher

notes were available to clarify inaudible digital recorder responses. The Microsoft Word

transcripts included the participant's confidential code, interview date and time, and

research title. The documents followed a rich text format that included speaker

identification as either *I* for researcher or *P* for participant.

**Participant's transcript review process**. Once transcribed, each participant

received his or her transcript from the researcher using a secured email account with the

Microsoft Word document attached and instructions for review and return (see Appendix

H). The participant reviewed his or her transcript to ensure the fair representation of

responses. The participant returned the transcript acceptance email message or submitted edits to the researcher through the same secured email account. After all participants' transcript acceptance, the researcher inputted the unstructured text data into QSR NVivo software, which facilitated an organized analysis to identify themes.

**Confidential Coding Process**

Prior to initiating the recruitment process, the researcher developed a coding system that created alpha-numeric unique confidential codes for each participant. The confidential code started with the letter *R* for research followed by the research year *2017*. The next series of letters were *CIO*. Finally, participants received a sequence number as they accepted the research invitation. Thus, a participant's confidential code may have been R-2017-CIO-15 and the next accepting participant may have been R-2017-CIO-25.

The digital recorder automatically produced a file number for each interview. As such, it was necessary to create a log to link each recorded interview to the participant's confidential code. This is the sole means to identify the digitally recorded interview to a participant by name. The mapping log is stored with the digital recorder in a separate location from the confidential code list and transcripts. Chapter 3 describes the maintenance and future destruction process for the recordings and artifacts.

**Sample Participant Demographics**

Of the 20 active civil service candidates contacted, 10 originally accepted the invitation with one becoming unavailable because of a state emergency. Follow-up conversations disclosed five of the remaining 20 candidates were new employees of the State of California and did not have sufficient in-service experience to answer the

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interview questions. The final five candidates of the original 20 candidates declined or

did not respond to the outreach. In total, nine CIOs participated in the study. Table 8

summarizes the participants' biographic questionnaire responses regarding their IT

project experience and training.

Table 8

*The 9 Study Participants Demographics*

| Demographic | Number |
|---|---|
| Years of Experience: Directing California IT Projects | |
|   1-5 years | 0 |
|   6-10 years | 1 |
|   11-15 years | 2 |
|   16-20 years | 3 |
|   21+ years | 3 |
| Years of Experience: Executive Management/Leadership Position | |
|   1-5 years | 0 |
|   6-10 years | 2 |
|   11-15 years | 4 |
|   16-20 years | 1 |
|   21+ years | 2 |
| Years of Experience: Current Position | |
|   Less than 1 year | 1 |
|   1-2 years | 4 |
|   3-5 years | 2 |
|   6-10 years | 1 |
|   11+ years | 1 |
| College Attendance | |
|   No | 0 |
|   Yes, but did not graduate | 2 |
|   Yes, graduated | 7 |
| Leadership, Business Management, or Public Administration College Coursework | |
|   No | 4 |
|   Yes | 5 |
| Project Management Training/Certification | |
|   Yes, other training | 6 |
|   Yes, PMI training | 3 |
|   Yes, PMP certification | 3 |

*Note*. Complied from participants' biographic questionnaire responses.

**Data Analysis**

The narrative data collected during the CIO interviews followed an analysis of

narrative technique. The analysis approach aligned with the study objective, which was to

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examine through the CIO perspective internal organizational factors that influenced large-scale IT projects using the California's statewide mandated frameworks to determine why IT projects failed or succeeded. Theme identification was the research objective, instead of merely documenting stories (Seidman, 2006). A combination of the research question, theoretical framework, and interview questions established the QSR NVivo software parent node and secondary categories used for data analysis. The categorization was used as group names to discuss the emergent themes.

The study's analysis process began after multiple reviews of the CIO interview transcripts. First, the transcripts were reviewed individually to develop a first-time impression. Next, the researcher reviewed the transcripts as a group based on the research question that was: What are California CIOs internal organizational success or failure experiences implementing large-scale IT projects? The research question served as the QSR NVivo software parent node. Preliminary secondary nodes were developed based on repeated words or phrases relevant to the research subquestions and Wilber's (2000a, 2000b) AQAL quadrants theoretical framework. The secondary nodes were I, We, It, and Its quadrants. From there, the CIOs responses to the 10 open-ended structured and follow-up interview questions were classified within the QSR NVivo software accordingly. Figure 6 in Chapter 3 depicts the anticipated interview questions and AQAL quadrant alignment outcome. However, the data analysis process showed the CIOs' responses mapped to multiple questions, and required an iterative process to combine, eliminate, and create new nodes and themes. The researcher finalized the themes and research results using Microsoft Word.

**Data Analysis Findings**

Several themes emerged from the examination of CIOs perspectives about the internal organizational factors that influenced large-scale IT projects using the California's statewide mandated frameworks to determine why IT projects failed or succeeded. Participants demonstrated positive and open dispositions, and did not appear to have any reservations about sensitive topics. Thus, the research findings went beyond the Willcocks and Margetts' (1993) risk management model to reveal the organizations' inner behavioral dimensions and the relationship among the factors. As a matter of organization, the participants' responses are presented using the AQAL quadrants of leadership, organizational social culture, organizational strategy, and institutional processes. Figure 8 illustrates the group and emergent themes using AQAL framework.

| | INTERNAL | EXTERNAL |
|---|---|---|
| **INDIVIDUAL** | Leadership/I Quadrant<br><br>Group Theme: Leadership Matters<br><br>*Emergent Themes:*<br>• Experienced IT project leadership improved outcomes but was rare<br>• Majority of IT project leadership emerged from technical ranks<br>• Normative leadership traits were deemed as beneficial in identifying leaders' attributes | Organizational Strategy/It Quadrant<br><br>Group Theme: Strategy, Structure & Management Alignment<br><br>*Emergent Themes:*<br>• Strategic planning was inconsistent within organizations<br>• Organizational denial about IT project health existed<br>• Vertical silos persisted<br>• Lack of awareness about strategic scope or footprint |
| **COLLECTIVE** | Social Culture/We Quadrant<br><br>Group Theme: Organizational Internal/External Relationships<br><br>*Emergent Themes:*<br>• Sponsors' buy-in was critical to IT project success<br>• Vendor roles, relationships, & power created tension<br>• State staff was ill-prepared to manage or participate on large-scale IT projects<br>• Internal staff use & relationships were governed by bureaucratic traditions | Process/Its Quadrant<br><br>Group Theme: Bureaucracy Reigns<br><br>*Emergent Themes:*<br>• The CA-PMM, CA-PMF & STAR had unknown effect on IT project outcomes<br>• Vendor solicitation process & management was archaic & disadvantaged the State of California or vendor<br>• Recruitment & retention of qualified IT project leaders was difficult |

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*Figure 8*. Data findings. The figure illustrates the data findings themes mapped to the AQAL theoretical framework.

**Leadership or I quadrant**. The CIOs experiences, as leaders was the focus. An overarching group theme was leadership mattered. The research participants responded to questions about IT projects leadership practices and leadership traits. The most frequent emergent themes were:

***Experienced IT project leadership improved outcomes but was rare***. All participants acknowledged the importance of IT project leadership but few were able to comfortably state resources were in abundance. A CIO commented "…in state service you don't have an unlimited supply of resources of any kind. So, you need people who will stand up and take charge." The CIO continued, "one of the [beneficial leadership] attributes was someone who desires to achieve results." A second CIO confessed to having difficulty finding an IT project leader that has the "whole package" with technical experience, people skills, and executive experience.

A third CIO reflecting on the least beneficial leadership traits experienced said aggressive and commanding IT project leaders do not have successful outcomes. "In a high stress, high impact, high scrutiny project, when everybody is working to the bone, it [aggressive and commanding leadership style] puts morale in the tank. I think the intention of that type of style is to succinctly convey decisions and that sort of thing. When I've been in…high impact situation where an IT project that is a lot of dollars, a lot of people looking at it, stress is the order of the day. A leadership style that can calm that, might sound like a naïve term, [but] do something to assuage the stress, decrease it is a huge positive. The more bullying, aggressive leadership style is just counterproductive to that situation."

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For the few projects with accomplished IT project leadership, inevitable problems were surmountable because the leader demonstrated both the science and art of project management said several research participants. A fourth CIO noted after reflecting on earlier IT project assignments that the accumulation of knowledge placed in context difficult situations and minimized fear of failure in a state environment averse to risks. The CIO said personal growth in project management skillsets, awareness about technology, and understanding business area responsibilities occurred after accepting several project-related positions at different organizations over a 24-year career. The practical knowledge and experience increased the CIO's confidence.

A fifth CIO mentioned effective IT project leaders and leaders in general had "an appetite for curiosity." The CIO continued "…we [State of California] over legislate ourselves via policy or practice or perception of what rules are and we put ourselves in a very narrow lane with the intent of reducing risk. What that does is really reduce our ability to think beyond boundaries." The CIO concluded the reflection on leadership by stating "I think the nature of the state system, with the classifications and exams, [is] to get to a certain level. We try to overcompensate so everything is fair. While the intent is good, I think we actually hold back people that could excel because we try to force them to live to the statements in a duty statement that are generic. Essentially, what you're saying is, 'Don't do what you can. Do what the document says.' I think that's the wrong message. So, I think we built the state system not to go get the creative go getters, but to get the people that are more the go with the flow."

***Majority of IT project leadership emerged from technical ranks***. A CIO noted many IT project leaders were application developers, application architects, and

infrastructure managers. The technical skillsets were scientific by nature. This reality often complicated communications with the business areas because the tendency was for the IT project leader to speak in "techie talk" instead of the business language. As such, several CIOs surmised the technical skills were easy to acquire but the interpersonal or people skills were the most challenging. IT project leaders without knowledge about the business function increased the project failure risks said all CIOs.

*Normative leadership traits were deemed as beneficial in identifying leaders' attributes*. The CIOs identified a variety of leadership traits including being a consensus builder, demonstrating subject matter expertise, having effective negotiations abilities, possessing integrity, being accountable, and trusting project team members. The most cited trait was the ability to communicate in various situations. A CIO said "Poor communication skills…that's a killer. Sometimes everything is fine but you have not told no one. You do not give enough project status updates to the right people. Things could be going horribly wrong or very well but they [IT project leaders] are not talking to anyone so everyone assumes the worse." Another CIO agreed the ability to communicate was essential. The CIO said, "I think the biggest trait though, is just being able to communicate, conversationally. Not from a position of power, or control but…to get to, 'What do you really need?' Not necessarily, 'What are you telling me you want? What is it that you're actually needing?' To have that conversation, you have to have that rapport and I think that's one of the traits I really focus on."

Repeatedly, during the later pre-planned interview questions, the CIOs returned to the leadership question to add IT project leaders must possess a self and situational awareness inclusive of people. A CIO remarked "I would say that that is the first thing

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leaders need to understand [is] what affect they have on other people. How do they perceive themselves? If you don't know yourself, how are you going to project yourself out there?" During an in-the-moment self reflection, a second CIO shared slow decision-making and "letting mole hills turn into mountains" was a personal negative trait. "I like to have a full on analysis. I want to gather as many facts as I can before I make a decision." A third CIO mentioned the cautious approach described a retiring baby-boomer generation of IT project and state leaders' who continued to leave state service.

**Social culture or We quadrant**. Organizational group experiences were the focus. An overarching group theme was social exchange dynamics within organizations and amongst team members. CIOs responded to questions focusing on the relationship among internal and external IT project resources. The most frequent emergent themes were:

*Sponsors' buy-in was critical to It project success*. Often cited as the reason for large-scale IT project failure or success was the degree by which stakeholders, especially internal business partners like sponsors, participated on projects. A CIO said "A lot of times what I've seen is, we put a good project team together and then, hobble them because at a sponsor level, or at an organizational level…we really don't know what we want out of it and we play whack a mole, nipping around the edges, issue of the moment and sometimes focus more on the how, or a lot of times, especially in the state, on the terms and conditions of a contract, rather than remembering the contract is to get to an outcome."

Another CIO shared a positive experience related to executive sponsor buy-in. A large-scale statewide project requiring internal implementation was encountering

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resistance within an organization. An engaged organizational sponsor changed the impending failure into a success by being unequivocal about expectations. The business area wanted to remain on the old system; however, "the sponsor said 'you are going'." The sponsor's awareness about the business requirements, technical solution, and change management process informed the decisions and use of power. With that direction, awareness, and visible sign of support, "every person took their role on the project seriously," said the CIO. The seemingly insurmountable workload was completed on-time.

   ***Vendor roles, relationships, and power created tension***. CIOs mentioned the use of vendors frequently. The practice of contracting for technical, project management, business analysis, and other related services is a common practice within the State of California. Despite this recurring practice, the relationship and impact on IT projects and the internal organizations was not favorable. A chief problem in large-scale IT projects was converting legacy data written in software languages like COBOL over 20 years ago. During IT systems lifespans, many data fields were used to capture different information based on the line of business changing requirements. Making sense of the legacy data is problematic but critical to IT project outcomes. State leaders transfer the risk of data transformation to vendors.

   Related, a CIO confessed during an in-the-moment reflection that business process documentation by business analysis (BA) vendors did not work out. "I am not sure why it is that way but the BAs that were brought in, maybe it just because they just don't know the business. They are business analysts but they don't know anything about [the project] so how are they suppose to help you build requirements for that. Or they

don't know anything about [a specific business process] so how are they suppose to help you with that?"

The deference to vendors created tension as the state staff on many projects were relegated to support roles. In one CIOs' estimate, the lack of experienced IT project leaders left the state vulnerable to vendors who "used" the state contracting process as means to underbid during the solicitation process. Routinely, the vendors "used" the agreed to change request process as means to increase costs.

Several CIOs mentioned another vendor community practice of soliciting and starting the project with the "A Team," and eventually replacing the agreed to consultants over time with less than capable resources. The personnel changes affected the projects by degrading the skillsets and knowledge needed to develop the technology. In other instances, organizations felt "hostage" to the vendor. A CIO said "No one wanted to fess up that that highly paid consultant wasn't delivering. He was the only one that knew how to do that stuff and so therefore any changes in timelines and stuff must have been IT's fault."

*State staff was ill-prepared to manage or participate on large-scale IT projects*. The delicate relationship between technical and non-technical resources was another source for IT project problems. A CIO recalled developing an elaborate technical solution for a business area. The CIO said "…at the end the user came to the recognition that they were going to have to actually gather the data that worked, that went into that elaborate process and keep it maintained." The resource slowly came to the realization "that it [application] would do its computations and everything but they would have to feed it at those intervals. That was too much for them. They thought the system would innately be

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able [to perform the data feed]. There's just unrealistic expectations. Just way outside their awareness."

Several CIOs shared that inexperience business area state staff populate project teams. More experienced and knowledgeable staff continue to retire from state service. The remaining few were in high demand. Without the end-to-end knowledge of the business policies, processes, and data developing functional requirements have become increasingly tenuous said the CIOs. "I hate to have to put it in here but its been a growing concern that I have seen in projects that I have worked. [I know] more about the customer's business requirements than the customer themselves. Often, the customers are really good at their work but they are not really good about saying what it is about their work in a way that you can turn into a specification to build a piece of software. They are not tuned to that. That is not what they do…they do the work…but [they are] not trained in talking about how they do the work." The CIO continued "Customers that either don't know their business requirements or cannot completely describe them or do not devote the time it takes to do so due to competing priorities. That is an issue I am floating through right now. I already have subject matter expertise in the building but they already have a 40-hour gig. They really don't have time to sit with me and document their business processes. That's a tough one…."

*Internal staff use and relationships were governed by bureaucratic traditions*. The CIOs experiences revealed how internal resources are used and valued. A CIO shared "some people you just have to give them the vision and they're off" because of their knowledge, skills, and ability to self-direct. Whereas others were not suited for a project or position. The CIO continued, "I've worked in organizations where people were

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leap-frog promoted and they are in a place that they should not be. Or they took a position because it paid more, not because they knew they could do the skills." A second CIO commented that state-level project management offices within organizations are the "receptacle" for people that other managers do not know how to utilize. In these instances, the organizations contracted with vendors to provide project management services, which further devalued the individuals and limited participation on IT projects.

A third CIO observed "way too often, [sponsors and executives] don't actually support the project team." The CIO continued "we'll ask a project team to do a project for us, rather than with us and that goes back again to kind of the executive leadership and that continual engagement and investment in the outcome." The executives' end goals were to establish a team, give the project funding, and re-engage with the project when it was done, which "very seldom leads to a good outcome," according to the CIO. The CIO said short-term thinking about resource management was common. For example, the most capable resources were excused routinely from complex IT projects because of other workload. The CIO asked rhetorically, "Why wouldn't you invest your best and brightest" on these large-scale IT projects?

**Organizational strategy or It quadrant.** Organizational strategy was the focus. An overarching theme was the balance and relevancy of organizational elements. CIOs answered questions about governance, structural design, management approach, and strategic planning. The most frequent emergent themes were:

*Strategic planning was inconsistent within organizations*. Strategic planning remained a concept in many organizations. In theory, the CIOs understood strategic planning purpose and the steps required. However, when pressed to describe his or her

specific organization's strategic planning process, most organizational strategic activity was in its infancy. The IT division role was often as a service provider while the business areas determined strategic direction for the program area or organization as a whole. Most CIOs' strategic focused was on the IT division's tactical actions in response to the program or organization's business needs.

In the instance where a mature strategic planning culture existed, large-scale IT project objectives were linked to executive compensation, an option not available in all state-level public administration organizations. A CIO shared, "The director forced every executive to have as part of their goals and objectives ensuring the success of our project. And, we were fortunate in that those goals and objectives were actually part of monetary compensation. So it was not part of lip service. If we were not successful, every executive would feel the impact in a monetary way. When we had a governance meeting, everyone was there. They were very vested in making it happen. This was very, very important."

***Organizational denial about IT project health existed***. Early admission that IT projects were undergoing problems was not commonplace said one CIO. The CIO explained no one wants to acknowledge a project was on the "path for failure." The admission would require adjustments or stoppage of highly politicized projects. A second CIO confessed "when I first started managing projects, in my mind I was not doing my job if I had risks or issues that I could not resolve. I felt that I was a failure if that occurred. I have learned that it truly takes a village. Everyone has different expertise, experience, ideas. You are not a failure but doing a good job, by raising the concerns and risks early and giving people the opportunity to mitigate and resolve them before they can't be."

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Several CIOs took issue with state required status report that they said were designed to paint a rosier picture than what existed. A third CIO shared "Four months into the project, that project had the stench of death. And yet my project status was green as can be…because the metrics they [Department of Technology] want you to report on aren't necessarily the killer metrics of a project." The CIO continued, "I was struggling to try to get this thing to even be yellow" using the metrics. The two CIOs separately agreed the scoring criteria did not "capture the essence" of why projects fail.

Another area of contention was validation and verification (IV&V) and independent project oversight report (IPOR) resources that monitor large-scale IT projects. The Department of Technology required as part of the IT project effort that an independent IV&V vendor was hired to monitor and report on a project monthly. A fourth CIO expressed frustration with the IV&V requirement and classified the expense as "wasteful" because "vendors wrote whatever the organization or IT project leaders asked." Some CIOs also expressed frustration with IPORs who were part of the Department of Technology state staff. IPORs worked for the control agency as a project consultant. Besides having the authority to suspend or cancel projects, their role was to provide recommendations to the sponsoring organization, IT project director, and the team to ensure a successful project completion. Some CIOs mentioned the IPORs focus tended to concentrate on control agency "agendas" instead of the organizational need.

*Vertical silos persisted*. Consistently, CIOs response to questions about organizations strategic planning process revealed the existence of vertical silos. A CIO explained, "a lot of times we set up vertical silos of folks where, essentially, anybody has veto authority." A second CIO also expressed concern about the structural design that

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impeded collaboration and communication amongst all project resources. The CIO said the challenge was changing the organizational culture from one where resources "sit in cubicles or behind closed doors" doing the work to an open exchange of ideas.

*Lack of awareness about strategic scope or footprint*. Several CIOs mentioned a contributing factor to why large-scale IT projects failed was the inability of state and vendor resources to comprehend the immensity of the State of California. "We still operate like we are a state even though we are as big as countries," remarked a CIO. "The complexity surrounding what California does, it seems like everything we do is different than the other states."

**Process or Its quadrant**. CIOs responded to questions about internal and external mandates required for large-scale IT projects. An overarching theme was the State of California's reliance on bureaucratic processes to regulate IT projects implementation. The interview questions specific focus was the control agency developed frameworks and processes. The most frequent emergent themes were:

*The CA-PMM, STAR, and CA-PMF had unknown effect on IT project outcomes*. The frameworks are not optional but required by the State of California Government Code. However, organizational implementation ran the spectrum of conceivable operational states. Some CIOs interviewed participated in the development or vetting of the frameworks. For those CIOs, the frameworks were embraced. A CIO's reserved approval of the framework was "It is not the cure but we are getting better at scrutinizing projects before they start." The organization had fully integrated the STAR's project approval lifecycle into internal processes. A second CIO commented that the acceptance of the framework appeared to be an inherited alignment from a previous

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administration. "I don't have the sense there is a belief that they [organizational executives] can say…we are not going do some things." However, a third CIO emphasized there was a mechanism to make improvement recommendations if the framework no longer added value. The CIOs supporting the framework could not provide empirical evidence about project performance as they had no knowledge about any project completing even the first of four STAR project approval lifecycle stages.

The majority of CIOs interviewed found limited or no value in the frameworks for various reasons. A fourth CIO shared "in none of the projects has the organization used any of state's project management frameworks." The CIO added "experience gives you the confidence to say this [alternate approach] is the right thing to do." A fifth CIO commented on the state's overall tendency to develop process-related mandates. "I think a general approach in the state is, [we] try to legislate success through project management processes and practices and reportable metrics. Every time there's a failure, or an issue, we come in with new rules, rather than making sure we're investing in people that would foresee those issues and keep us from ending there."

*Vendor solicitation process and management was archaic and disadvantaged the State of California or vendor*. The CIOs agreed a cause for large-scale IT project failures was a vague statement of work or contract. The culprit was often which contract side, state or vendor, would assume the IT project risks. A CIO said a poorly managed solicitation and contract often led to project delays and cost increases. A second CIO remarked there was nothing within the state to hold the vendors "feet to the fire." As such, "it is only by the good graces of the vendor that they finished the project," said the second CIO. However, the state-vendor relationship problems did not rest entirely on

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vendors' actions. The second CIO continued, "On the flip-side, I have seen the state ask [a] vendor to work 2 years without getting a payment. It has to be fair and equitable. It has to be structured in a way the vendor can keep afloat and be rewarded when the organization is successful."

Several CIOs noted a perceptible vendor solicitation and management process shift occurred when the State of California political leaders sought to reduce state risks by outsourcing technology functions like systems integration. "Transferring risks" was the adopted euphemism for "outsourcing," which when used caused political and labor relationship rancor. The change in strategy meant the 18 to 30-month vendor solicitation process was often controlled by control agencies instead of the sponsoring organization. Multiple CIOs said, the change along with the retirement of experienced procurement and contracting state staff left a process void.

A third CIO noted the irony. "We're going to push risk off of the state onto a vendor. But, by doing that, we're not setting up a partnership because the vendor's baking in all kinds of risk. They're charging higher prices and they're always looking for the exit clause, or really, they're looking for how to push things back at the state and say, 'This wasn't our fault because your people didn't give us the right requirements.' Rather than having two parties coming together to get to an outcome, we've got two parties that if they arrive at an outcome, that's great, but they're really setting each other up to take the fall if we don't get there."

***Recruitment and retention of qualified IT project leaders was difficult***. The CIOs consensus was the state needed a different approach to recruiting and retaining IT project leaders. A CIO commented on the state's propensity to use titles. "Now we're

using project director because it sounds nice and it's more of a badge of honor than an effective title. We use titles that sound nice and sound flowery. But, a lot of times, we are putting candidates in that don't have the practical experience." The CIO continued, "I don't think a project director or project manager necessarily has to have an IT background. They really need to be more invested in the why than the how and I don't think we do that very well, or at least very consistently."

Other CIOs thought that an IT background was necessary so the IT project leader had a sense about the technology. A second CIO said "The project manager or whoever controls the project needs to have project management skills along with IT hardware and software background. You will see a lot more success. A lot of time when I talk with project managers, they do not have that understanding. To me, it is good to have a well-rounded [knowledge base]. [For example], when you look at Caltrans and you want to build a bridge, the project manager understands what it takes to build a bridge besides the project management training. Whoever is handling a project, they should have an understanding of the project where the software resides."

Asked whether the CIOs preferred hiring an IT project leader they knew but had less skills versus hiring someone unfamiliar but had the skills, the responses tended to fall within the former group. A third CIO responded with a slightly different scenario by saying "I rather have somebody that has the aptitude first, and if not a 100 percent experience. I rather see somebody with the aptitude and wants to do it, and obviously have some background versus someone who has 100 hours of this and that and I am unsure they are the right person. I have seen a lot of times people bring friends or people they know because they think that they would do a good job. It does not work all the

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time. In fact, the friendship or connection may be a hindrance because you do not want to be as harsh to them as you would someone else."

**Summary**

The data findings disclosed 14 emergent themes among the four categories from the study on CIOs perspectives about the internal organizational factors that influenced large-scale IT projects using the California's statewide mandated frameworks to determine why IT projects failed or succeeded. Grouped by the AQAL theoretical framework quadrants I, We, It, and Its, the information on one level supported previous research findings that people and processes were major factors influencing projects success or contributing to failures. However, the CIOs responses developed an enriched awareness about the in-depth causes for the systemic problems.

The leadership quadrant or leadership matters group had three emergent themes. First, experienced IT project leadership improved outcomes but was rare. Second, the majority of IT project leaders emerged from technical classifications with minimum direct exposure to organizations' business areas. Third, the CIOs often cited normative leadership traits like effective communication as being beneficial for IT projects.

The social culture quadrant or relationships dynamics group had four themes. First, sponsorship buy-in was a critical success factor. Second, the vendor role, relationship, and power created tension within IT project teams. Third, although appreciated by the CIOs, the state staff was deemed ill-prepared to manage or participate on large-scale IT projects. Fourth, internal staff use and relationships were governed by bureaucratic traditions. Interestingly, the third and fourth social culture themes

demonstrated the complex interrelationship found amongst the quadrants and 14 emergent themes.

The organization quadrant group theme concerned the balance and relevancy among the organizational elements. The four emergent themes concerned the consonance and orderliness of the organization as external and internal environmental changes occur. First, strategic planning was inconsistent within organizations. Second, organizational denial about IT project health led to decision-making paralysis. Third, bureaucratic vertical silos persisted. Fourth, leaders' actions demonstrated a need to improve awareness about the strategic scope or footprint of large-scale IT projects.

The fourth quadrant concerned systems, policies, and processes, which attested to leaders' continued reliance on the bureaucratic model to manage California's complexity. The first theme was project management frameworks had unknown effect on outcomes. Second, the vendor solicitation process and management was archaic and disadvantaged the State of California or vendor. Finally, the recruitment and retention of qualified It project leaders was difficult.

Chapter 5 contains a detailed discussion about the findings. Recommendations for public administration executives about leadership is within the chapter. In addition, the chapter contains a conclusion about the research process designed for the study that includes the limitations and opportunities for further study.

Chapter 5

Conclusions and Recommendations

The purpose of the qualitative narrative study was to examine through the CIO perspective internal organizational factors that influenced large-scale IT projects using the California's statewide mandated frameworks to determine why IT projects failed or succeeded. A common problem for both private and public sector organizations were IT projects high failure rates (Boyd, 2008; Franken et al., 2009; Fulk et al., 2013; Sharma & Sharma, 2010; Standish Group, 2013). California's specific problem was despite the existence of several project management frameworks, IT project failures persisted. Thus, the research question guiding the study was: What are California CIO's internal organizational success or failure experiences implementing large-scale IT projects?

A discussion of the findings detailed in Chapter 4 anchors Chapter 5. The following analysis occurs within the context of the literature about private and public sector IT projects, and the interrelated topics of public administration, organizational management, leadership, change management, and technology. The data findings separately and as a whole addressed the research question and subquestions. The discussion presentation reflects the AQAL theoretical framework, which provided an efficient means to organize the narratives and discuss the internal factors affecting IT projects.

Chapter 5 also contains recommendations for leadership and practice along with potential future research opportunities. Within the chapter are the study's limitations that inform the research community about the inherent and self-imposed study boundaries. The chapter ends with a study summary and concluding observations.

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**Discussion of Findings**

Nine California public administrators at the state-level participated in the study. Collectively, the title CIO identified the group who served in various positions as AIOs, CIOs, deputy directors, and project directors. The common thread was the responsibility to lead large-scale IT projects. In this charge, experience and an awareness about leadership, strategic planning, organizational management, group dynamics, and processes were necessary to answer the 10 structured questions along with any follow-up questions that resulted. The 90-minute interviews produced an abundance of data requiring extensive analysis to finalize four group and 14 emergent themes summarized in Table 9 (see Appendix J).

The study findings placed into context the risk categories documented in Willcocks and Margetts' (1993) seminal model discussed in Chapter 2 and illustrated in Figure 3. Although the classifications enabled general cognitive awareness, the model proved insufficient in explaining the persistence of IT project problems within the State of California public administration organizations. The external dimension contained uncontrollable factors that required monitoring to develop strategies that minimized threats or seized upon opportunities because of changing paradigms. Strategic shifts were the result of global events and control agency regulations. As hypothesized in Chapter 1, the majority of IT project problems resulted from the internal organizational dimension. The personal qualitative narratives described within Chapter 3 research methodology proved to be an effective. The design captured the internal dimension data that was analyzed in Chapter 4. Therefore, Chapter 5 explains how the in-depth study into the CIO experiences created actionable knowledge.

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Table 9

*Data Analysis Findings*

| Group Themes | Emergent Themes |
|---|---|
| Leadership or I quadrant: Leadership Matters | • Experienced IT project leadership improved outcomes but was rare.<br>• Majority of IT project leadership emerged from technical ranks.<br>• Normative leadership traits were deemed as beneficial in identifying leaders' attributes. |
| Social Culture or We quadrant: Organizational Internal/External Relationships | • Sponsorship buy-in was critical to IT project success.<br>• Vendor roles, relationships, and power created tension.<br>• State staff was ill-prepared to manage or participate on large-scale IT projects.<br>• Internal staff use and relationships were governed by bureaucratic traditions. |
| Organizational Strategy or It quadrant: Strategy, Structure, and Management Alignment | • Strategic planning was inconsistent within organizations.<br>• Organizational denial about IT project health existed.<br>• Vertical silos persisted.<br>• Lack of awareness about strategic scope or footprint. |
| Process or Its quadrant: Bureaucracy Reigns | • The CA-PMM, STAR, and CA-PMF had unknown effect on IT project outcomes.<br>• Vendor solicitation process and management was archaic and disadvantaged the State of California or vendor.<br>• Recruitment and retention of qualified IT project leaders was difficult. |

*Note*. Complied from Chapter 4 list of research findings.

The application of Wilber's (2000a, 2000b) AQAL theoretical framework

deconstructed each CIO's interview response into the four quadrants of I, We, It, and Its

to identify emergent themes before reconstructing the entire collection of experiences

into a holistic narrative about the problem. Emerging from the stories was the notion that

IT project problems were symptoms of greater organizational issues. Complicating

matters was the mutable meaning of public administration as a managerial,

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organizational, political, or legal approach as noted by Waldo (1948). These coexisting perspectives influenced the strategic vision, IT project implementation approach, and use of technology (Henderson & Venkatraman, 1999; Powell & Snellman, 2004).

The data analysis found sufficient evidence of conflicting organizational management practices. Public administration leaders and staff focused on executing specific frameworks or processes without consideration of the context or content, which supported a previous study finding from Istrate and Marian's (2012) research. Wilson (2008) also noted, in general, public administrators were more interested in following the right rule than achieving a goal. Hence, the dilemma was determining if there were specific causes for the inconsistent organizational management practices such as leadership, social relationships, organizational strategies, or processes. The conclusion was all of the aforementioned reasons affected organizations' ability to execute IT projects. AQAL provided a theoretical framework to illustrate how the quadrants and whole system interacts. Past research investigated the generalized organizational construct or a singular lens such as leadership. This study's discussion was different as it applied the same level examination to the entire system and the specific lens.

**Leadership or I quadrant**. Leadership still mattered as discovered during the CIO interviews, which aligned with the leadership theory scholarship. The leadership emergent themes derived from data findings were (a) experienced IT project leadership improved outcomes but was rare, (b) the majority of IT project leadership emerged from the technical ranks, and (c) normative leadership traits were deemed as beneficial in identifying leaders' attributes. The CIOs agreed large-scale IT projects experienced problems because of scope complexity, multiple stakeholder interests, organizational

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dynamics, and uncontrollable external factors. However, the CIOs' stories indicated experienced leaders with the knowledge, skills, and self-drive were able to more effectively prevent or mitigate IT project problems. The unintended irony about IT project leadership conundrum was captured in a CIO's comment that "What we do in project management or IT is not rocket science. Even rocket science is not rocket science any longer. You give the specs to the computer and there you go." However, finding the public administration equivalent of the contemporary rocket scientist remained a challenge.

To consider the lack of IT project leadership as an isolated phenomenon is short-sighted. The history of public and private sector projects often cited failed leadership as significant reason for abandoned or failed projects (Chua, 2009; Conboy, 2009; Gauld, 2006; Goldfinch, 2007; Istrate & Marian, 2012; Lesca & Caron-Fasan, 2008; Loukis & Charalabidis, 2011; Pan et al., 2007; Pawlowska, 2004; Purao et al., 2012; Willcocks & Margetts, 1993; Yuttapongsontorn et al., 2008; Zecheru, 2013). As learned through previous research on leadership, the role served as an integral aspect to ensuring organizational health, especially within sociotechnical organizational systems (Asif et al., 2011; Bazigos et al., 2016; Kouzes & Posner, 2012; Nahavandi, 2012; Rosacker & Rosacker, 2010; Shane 2009). The ability to gauge external and internal environmental conditions, envision strategies, manage processes, empower staff, and mitigate problems remained essential leadership qualities that occurred simultaneously and based on the circumstances.

The inability of the State of California to have at the ready capable IT project leaders perplexed many CIOs. Possessing knowledge about technology and business

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processes along with having the political acumen and intellect to prevent "mole hills from becoming mountains" was often cited by CIOs as desirable traits. Birshan, Meakin, and Strovink (2017) deemed the emerging requirements as exceptional traits and wrote that they were hallmarks of effective leaders. The characteristics indicated a coexistence of art and science noted a second CIO, which aligned with a block of research contemplating leadership's unobservable fifth dimension (Senge, 1990, 1998, 1984; Senge et al., 1999). However, the State of California through government codes, policies, and frameworks emphasized the science of leadership said the same CIO. This thought may explain a data analysis finding theme that the majority of IT project leadership emerged from the technical ranks who were more inclined to follow administrative rules versus making sense of abstract non-linear social conditions. An orientation to processes instead of people like the business area stakeholders created blind spots. The findings supported previous research about organizational management (Ashkenas et al., 2002; Balogun et al., 2005; Collins, 2001; Hoque, 2011). In concurrence, the second CIO said IT project leaders concentrated on "mundane" functions like ensuring mandated status reports and control agency frameworks were followed. Several CIOs shared a perception that minimum effort was allocated to problems that caused systemic project failures because the factors that did not aligned with current mindsets or political interests. This tendency harkened to Weber's bureaucratic organization emphasis on processes as means to control uncertainty and the external environment (H. Simon, 2000; Riccucci, 2010; Udy, 1959; Waldo, 1940; Wilson, 2008).

The art versus science of IT leadership and projects was more complex because the skillsets required demonstrable expertise in people-oriented factors. The finer points

led to the ancient question regarding leadership development. The continuing debate in leadership theory was whether leaders were born or developed (Bass, 1990; Wren, 1995). Recent scholarship contended circumstances determined meaning and the traits most beneficial (Amernic et al., 2007; Bazigos et al., 2016; Ismail et al., 2011). The utmost measurement about leadership existence and effectiveness was organizational health wrote Bazigos et al. (2016), Korkmaz (2007), and Lencioni (2012).

For this study, the information that normative traits identified in previous studies continued to determine effective leadership was not surprising but helped to identify another research data analysis finding theme. The CIOs discussed leadership in the context of innate or learned behavior. A third CIO commented that either someone was a leader or they were not. However, the leader still needed to acquire and hone their skills like communications to be effective continued the CIO. A fourth CIO responded "I believe it can be a learned behavior." And, a fifth CIO appeared to agree with each thought by saying both types of leadership existed. The fifth CIO asked rhetorically "Can it be learned? Can I still improve? Absolutely." Whatever the response, the CIOs agreed that experienced IT project leadership improved outcomes but was rare within the state, which was another data analysis findings theme.

The cited causes for the rare existence of experienced IT project leaders were public administration's de facto internal organizational designs. The nature of public administration remained entrenched in Weber's bureaucratic culture according to H. Simon (2000), Riccucci (2010), and Wilson (2008). Unlike the private sector, the public sector maintained regimented roles and inflexible chain of commands, which were controlled by multiple layers of management. However, in an effort to adopt private

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sector business practices that improved operational efficiency, the State of California organizations began implementing IT projects. In respect to IT project leadership, the concept became diluted by pre-defined classifications, job specifications, and duty statements. To work beyond the boundaries impeded upon realms of control that were defined partially through rank-and-file union contracts dictating staff to manager ratios. Further, the deterministic human resources practices affected the identification, selection, and training of qualified individuals. Within the State of California, consensus about leadership beyond the well-known normative traits remained less certain as a limited few CIOs discussed qualities characterized as exceptional. Leadership meaning tended to be defined by organizational parameters. Recognizing the crisis in leadership, the State of California in recent years developed leadership training programs. Led by the Department of Human Resources and in partnership with the California State University, Sacramento or the University of California, Davis, the programs were meant to familiarize executives and managers with evolving leadership concepts. However, access to the training was limited and determined by internal organizational decision-makers' interests said a CIO.

Thus, the study supported traditional leadership research findings but contributed to the literature library by providing a concrete example of the important interrelationship among the multiple factors. Wilber's (2000a, 2000b) AQAL theoretical framework helped to efficiently link leadership, social culture, organizational strategy, and process quadrants. Each influenced and was influenced by the other quadrants. Leaders were not just members of the social culture quadrant but influenced the organizational culture through formal and informal relationships. In respect to the organizational strategy quadrant, leaders established the vision and initiated reforms to transform practices.

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Finally, leaders' worldviews were deterministic about the processes used to execute organizational strategies. To concentrate on one quadrant and not the others was an organizational management misstep. The time and resource investment in developing the Department of Technology's CA-PMM, STAR, and CA-PMF frameworks focused on one of the many internal factors affecting large-scale IT projects. For the State of California's future large-scale IT projects investments, developing an awareness about the interrelationship is critical. In respect to leadership, effective IT project leadership depends on a recruitment and retention process based on individual acumen, industry-defined qualifications, and relevant authority and responsibilities.

**Social culture or We quadrant**. Of the study's 14 emergent themes CIOs identified as critical to large-scale IT projects failures and successes, the themes associated with relationships were the most complex. The social culture or relationship dynamic emergent themes were (a) sponsors' buy-in was critical to IT project success, (b) vendor roles, relationships, and power created tension, (c) state staff was ill-prepared to manage or participate on large-scale IT projects, and (d) internal staff use and relationships were governed by bureaucratic traditions. In the study, the CIOs were asked to think through the relationships between internal groups along with internal groups and external participants or stakeholders. What emerged was commentary about the social dynamics most important to the CIOs' individual worldviews. The observation supported previous research by Parker (2008), Thompson (2008), Volmer, Spurk, and Niessen (2012), and Yukl (2013) about the leader and members exchange.

The bi-directional relationship between leaders and teams was through self-determination. Leaders granted access to individuals and groups based on trust,

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friendship, and perceived value. Other individuals and groups, no matter the role they served, were managed through distant relationships (Parker, 2008; Thompson, 2008; Volmer, Spurk, & Niessen, 2012; Yukl, 2013). The study aligned with previous research about leader-members' relationships. For instance, the California legislature and Department of Finance were named by several CIOs as essential team members but internal organizational budget groups were rarely mentioned despite the staff responsibility to manage IT project funds approved by the two named control agencies. An observer might have assumed differently about the internal budget staff mentions considering two frequent budget management issues affecting large-scale IT projects. First, California large-scale IT projects often have cost overruns that require in-time budget management and reporting to the California legislature or the Department of Finance. The second budget management issue was the vendor propensity to underbid contracts but charge at a higher rate for change orders, which increased costs. Managing the budgetary changes for large-scale projects requires considerable knowledge about the funding sources rules, contract language, and project development plan. Possibly, the reason for the difference in consideration of external and internal budget team members is elementary. The California legislature and Department of Finance have the power to approve and cancel projects, whereas budget staff were often limited to tracking expenditures.

Another distinguishing aspect of the social culture quadrant was changing philosophical beliefs. In theory at least, the CIOs supported organizational management transformation in regarding individuals and groups roles. The shifting perspective held that individuals and groups were valued knowledge workers instead of mere tools within

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a mechanized isolated structure (Asif et al., 2011; Drucker, 1999, 2002; Ghosh & Sahney, 2010; Hermann et al., 2007; Neyer et al., 2009; van der Zwaan & de Vries, 2000). However, the CIOs comments betrayed beliefs and revealed the fabled gap between theory and action within California state organizations was an actual problem. A CIO remarked organizational sponsors' behavioral tendencies was to consider IT project teams as tools who do "a project for us, rather than with us." McShane and Von Glinow (2010) wrote organizational behaviors and habits shaped the culture more so than espoused theoretical statements. Another hindrance to transforming theory into action were the bureaucratic traditions that defined and restricted team members' participation. Multiple layers of management, political nature of large-scale IT projects, and leadership perspectives concerning contracting for consultants influenced who, how, and when individuals or groups participated.

In contrast, sociotechnical systems were defined by organizational cultures with shared decision-making and self-directed virtuoso teams (Boynton & Fischer, 2005; Lencioni, 2012; Parker, 2008; Thompson, 2008). Within these environments, organizational and project health were the foremost strategic concern. As such, a primary responsibility was the identification, utilization, and engagement of the sponsors, stakeholders, IT staff, business area staff, vendors, control agencies, industry relegated, advocates, municipalities, other states, federal government, the media, and the public. Also vital were resources responsible for back-end public administration areas including budgeting, procurement and contract management, training, and facility management. Several CIOs shared the latter groups were often overlooked and engaged late in IT projects. In an ideal situation, the inclusion and timing of group participation was

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essential in limiting the repetitive team development process that include the forming, storming, norming, and performing stages (Boynton & Fischer, 2005; Lencioni, 2012; Parker, 2008; Thompson, 2008). With the addition of each new project member or group, the cyclical process started anew as roles, power, and requirements were renegotiated. A CIO commented, the inclusion of internal and external stakeholders shifted the perception about a once troubled project.

A discussion of two similar California projects illustrates the social culture themes. The project specifics were not included to ensure CIO anonymity. The first CIO who promoted through the ranks performing different project management roles had a holistic and hopeful outlook about internal and external participants. Whereas, the more technically inclined IT project leader engaged participants based on specific specifications or time-and-place as defined by duty statements, industry specifications, or the resource timeline allocation. The first CIO shared that after taking over a troubled project, the immediate task was re-engaging a multitude of key individuals and groups. Foremost was the internal technical and project management staff. The project team members were marginalized during the previous project phases for a host reasons including the data analysis findings theme: state staff was ill-prepared to manage or participate on large-scale IT projects. The CIO found fault in the assessment because it did not consider other factors affecting the staff ability to perform tasks like a disengaged sponsor, lack of strategic direction, or staff disempowerment. Consequentially, the CIO's immediate action to fix the troubled and complex project was instilling confidence into the state technical and project management staff. "They need to believe you are going to be able to help them succeed. If you waver in your confidence of being able to do that, it

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shows through and it will hurt you. You need to be able to instill confidence and the ability to be decisive and make decision. In every organization that I have been in, people are very hesitant to make decisions. They are very fearful of being wrong." The CIO continued that for the troubled project, "Not only did we [decision makers] talk the talk, we walked the walk."

Conversely, the second CIO in similar circumstances championed the state staff technical abilities but appeared less enthused about the project management staff despite identifying potential from one group member. "In a year's time when it is appropriate, I will contract for a project manager." The second CIO's comment intimated a unilateral decision, which was unlike the first CIO who worked with executives to develop and implement a staff development solution that aligned with the organizational management philosophy about staff as valued team members. The second CIO's perspective was not unique among the study participants. Despite criticism directed at vendors, contracting with consultants to perform IT project-related tasks instead of using state staff was a consistent development approach.

The State of California uses the phrase *transferring risks* to describe vendor use, which is most commonly known as outsourcing. Some CIOs expressed frustration with the practice as recent California large-scale IT project failures had consultants serving as system integrators, project managers, business analysts, testers, quality analysts, and IV&V. The aforementioned situation illustrated another social culture theme that internal staff use and relationships were governed by bureaucratic traditions despite California officials' public statements made to the contrary. The inconsistency in what was espouse versus actions undermined trust between leaders, individuals, and groups from within and

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outside of the organization. Consequentially, the CIOs narratives disclosed passive and overt staff resistance to the changes delivered through the IT projects resulted because of the conflicted relationship among organizational leaders, IT project leaders, and team members, which supported Markus and Robey's (1988) research findings.

Thus, the management of social culture and organizational relationships was probably the most frequent reason for IT project success or failure according to the CIOs. The data findings aligned with previous research on virtuous teams that described theoretical best practices for developing healthy relationships amongst team members. However, the research did not sufficiently explain the disparity between theory and practice. Theoretical principles conflicted with the actual external and internal organizational circumstances. Instead, greater insight was developed from two analytical sources. First, an enriched awareness developed when the data findings were analyzed in context to leadership, public administration nature, organizational management, and change management research. Second, the interrelationship among the quadrants again demonstrated the value in understanding specific lens within the context of the whole system. As with the leadership quadrant findings, individuals and groups did not behave as scripted by research theory. Leaders influenced the social culture beliefs, norms, and actions in two ways. First, acceptable implicit and explicit behaviors were normalized within the formal culture through leaders-membership relationship modelling. Second, unacceptable behaviors became a part of the informal culture that was either tolerated or ignored. In this regard, the formal and informal social culture influenced both the organizational strategy and process quadrants through various levels of acceptance or resistance.

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John Steinbeck's (1937) immortalized words regarding the best-laid plans of mice and men is an appropriate literary metaphor describing the social culture and relationships within organizations. Leaders who developed and managed teams with consideration of the organizational DNA decreased the risk of team dysfunction (Lencioni, 2012; Morgan, 1997). This required leaders to practice the art and science of leadership to enable IT project teams to achieve the objective. The obvious lesson is worth repeating, unpredictable environmental shifts and human nature required leadership foresight to nurture and empower resources because as one CIO noted, "I can't be everywhere so I need to rely on the team."

**Organizational strategy or It quadrant**. Balance and relevancy was the group theme for the quadrant related to organization strategy. The organizational emergent themes from the data findings were (a) strategic planning was inconsistent within organizations, (b) organizational denial about IT project health existed, (c) vertical silos persisted, and (d) lack of awareness about strategic scope or footprint. Differing opinions existed regarding the best means to assess public administration strategic value. In a CBS interview discussing a new government nee public administration statistical website, Steve Ballmer formerly of Microsoft acknowledged "government is not a business" (Kadro, 2017). He continued, government was measured on its societal "impact" (Kadro, 2017). The organizational strategy emergent themes identified conceptual strategic misalignment that may invite questions about organizational readiness to implement large-scale IT projects. As a whole, the data findings helped to explain why Bridgeland and Orszag (2013, p. 1) surmised that "out of every $100 governments spend, less than $1 has supporting or justifying evidence the investment was worthwhile."

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The experiences of California CIOs related to organizational strategy added to the existing research in three ways. First, the study findings provided more descriptive about public administration purpose. Second, the study findings partially dispelled the myths about public administrators' motivation. Third, the study findings revealed new information about the use of language when discussing strategy, structure, and processes.

Unsurprisingly, the first research finding supported previous research that the external environment's political, social, and technical changes influenced organizational strategy (Morgan, 2007; Scott & Davis, 2007; Tsoukas, 2006; Yukl, 2013). Depending on the situation, the environmental drivers were either opportunities or threats that required organizational change by (a) deconstructing or unfreezing the status quo, (b) creating a new solution, and (c) reconstructing or refreezing the organizational culture per Lewin and Kotter's change models (Burnes, 2004; Erwin, 2009; Kotter, 1996). In the majority of CIO interviews, the discussion about organizational strategy was brief because federal and state mandates, elected officials' interests, or the regulated industry vision identified strategic endeavors. The purpose of public administration was to implement the mandates that provided societal services or regulated industries. Therein, internal staff managed those programs and assets. IT projects were the means to accomplish the mandates and address infrastructure changes that resulted from technological advancements.

Accordingly, the most prevalent Henderson and Venkatraman (1999) strategic alignment model identified during the CIO interviews was the business strategy as the driver. Alternately, the perspectives were either the strategy execution or the technology transformation. Strategy execution entailed the classic use of IT for business purposes (Henderson & Venkatraman, 1999). Within this perspective, the IT division provided

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technology as a tool such as standard desktop software, hardware, and internet services. Technology transformation perspective expanded on the former concept by enabling the business area to implement technological solutions to address business needs. Technical assets like law enforcement offender databases and the Department of Motor Vehicle websites for driver license and vehicle registration renewal provided continuous access to information and services.

The second research finding partially debunked a popular publicly held belief about public administrators' indifference. Research by Andrews and Boyce (2010), Boin and Hart (2003), Henderson (2004), and Purao et al. (2012) identified some faults including leaders' hardened perspectives and self-interests that affected strategic decision-making. A memorable moment during the CIO interviews was the enthusiasm each discussed the reasons for large-scale IT projects failures and successes. Most study participants exhibited an earnestness to discuss forthrightly sensitive matters, despite the potential professional repercussions. All of the CIOs demonstrated a keen political sense in discussing the national, state, and organizational agendas and interests that affect IT projects. Specific to California, strategic awareness about the organizational culture and state system was evident and shared in intricate details including the CIOs' own personal biases. However, Andrews and Boyce (2010), Boin and Hart (2003), Henderson (2004), and Purao et al.'s (2012) less complementary findings were validated when the CIOs considered other individuals like project sponsors or group behaviors within organizations.

IT project failures and successes depended on CIOs' ability to act on knowledge by navigating through the irregular strategic planning, governance, priority setting, and

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structural challenges like vertical silos. In many instances, the mistake chains as noted by Pan et al. (2007) affected the organization and IT leaders' abilities to heed previous research and practice warnings. Three CIOs told stories about personal leadership fortitude that influenced actions in the best interest of an IT project or organization instead of following incongruous strategies dictated by control agencies or political agendas. The rare feats of defiance overcame "unnecessary" process rigor or "short-sighted" interests said the three CIOs. The experiences illustrated the dilemma some public servants encountered when interests conflicted, which was protecting one's professional-personal security and being a responsible steward of public assets through servant leadership. A CIO commented for some colleagues, knowing a moral dilemma existed but risking professional-personal comfort appeared a "bridge too far" for many. The inaction resulted in strategic malice and malaise in the form of Goldfinch's (2007) finding about the tendency to redact, underreport, and falsify negative information. To a person, the CIOs hesitated in identifying any leadership behavioral shortcomings as groupthink. Instead, the behavior was described as a form of arrested leadership development. For instance, the same three CIOs said some IT project leaders, sponsors, colleagues, and vendors failed to grasp the enormity of California's IT projects. IT projects' national and global footprint was extensive because of the state's standing as the sixth largest world economy. However, some IT project leaders and executives routinely developed project strategies as small scale endeavors. When the inevitable problems surfaced, the leaders masked or denied projects' poor health ratings remarked the CIOs' hesitantly.

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The third study finding revealed that a commonplace tendency within California state organizations was forgoing strategic planning in favor of the tactical implementation of IT projects. Initially, the discovery was difficult to ascertain because of the intentional or unintentional misuse of language. The CIOs used the term *strategic* but described tactical actions. Like other private and public sector organizational cultures, language games were integral in communicating meaning about the parts and whole system explained Delanty and Strydom (2003) and Lyotard (1996). Caron and Giauque (2006) wrote workers' performance through the lens of productivity, efficiency, risk-taking, and innovation codified strategic relevancy. However, as strategic decisions were often determined by external actors, California public administration organizations repurposed the terms' meanings to reflect what was part of CIOs social environment and span of control. Wittgenstein (in Delanty & Strydom, 2003) described the language transformation process as a social bond created and regulated through discourse. The study found the language changes altered understanding and expectations about IT projects strategies, tasks, and performance outcomes.

A systematic enterprise-wise strategic planning process was a rare occurrence within organizations represented by the CIOs. The research participants' strategic questions responses often reverted to actions within the IT division. A contributing factor that confused the meaning of *strategic* where the vertical silos that created subcultures and narrowed visions. Further fracturing occurred within the silos. As described by the CIOs, the linear tactical processes performed by work units segmented and redefined the strategic objective to make sense within the narrowed contextual domain. Routinely, unit outputs deemed completed by the work group did not meet the strategic objective

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reported several CIOs. The technical symmetry was lacking as supply chain units had different perspectives about achieving the objective. Absent was a cohesive strategic presence to connect the processes, identify blind spots, and manage the spaces that were in between.

Thus, the organizational strategy quadrant findings were a mix of possible research alignment outcomes that reflected challenges developing organizational strategic balance and relevancy. Within this quadrant, the relationship with the external macro environment depicted in Figure 1 was most pronounced. The political, social, and technology global trends determined organizational strategy, which aligned with previous public administration and organizational management research findings. The insight helped to explain, in part, the inconsistent strategic planning activity within California state organizations. Study findings less conclusive were the reasons for the cognitive dissonance between organizational beliefs and actions. On the one hand, the CIOs comments during the interviews did not align with previous research that described public administrators as strategically indifferent. However, the demonstrated willingness to stand against elected politicians and their executive appointees was rare, which aligned with the research findings about public administrators' self-interest. Finally, the data findings provided new understanding about how language affects strategic implementation within a bureaucratic environment. As with the previous quadrants, the resulting insight was developed through the interrelationship of separate research fields including public administration, organizational management, change management, and technology. The organizational strategy quadrant was a reflection of the leadership and social culture dynamics and perspectives. Implementing relevant IT project strategies

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required negotiated changes to systems by the formal and informal social culture. Strategic transformation required revisiting temporal organizational management principles and structures that included the process quadrant frameworks and processes.

A CIO used the carnival game whack-a-mole as a metaphor to describe California organizations strategic planning efforts. Organizational actors scurried to address political decisions, social expectations, and technical advancements as the need surfaced. The strategic planning effort was limited, and helped to create a culture where large-scale IT project failures became expected and normal. Unchanged were the organizational management principles and structures that created incongruous boundaries. The organizational strategic quadrant provided information regarding the importance of (a) a socialized strategy across vertical and horizontal boundaries, (b) symmetry of structural designs and process flows, and (c) a consistently articulated and achievable technological perspective developed by management and state staff.

**Process or Its quadrant**. The data findings from the process quadrant solidified the academic and practice belief that within California state organizations, bureaucracy reigns. The process-related emergent themes were (a) the CA-PMM, STAR, and CA-PMF had unknown effect on IT project outcomes, (b) vendor solicitation process and management was archaic and disadvantaged the State of California or vendor, and (c) recruitment and retention of qualified IT project leaders was difficult. As a whole, Weber's bureaucratic design remained a fixture in California state public administration system and influenced state processes. In theory, state leaders understood the value of open systems that engaged staff by deconstructing rigid processes (Ashkenas et al., 2002; Balogun et al., 2005; Collins, 2001; Hoque, 2011). However, with each IT project crisis,

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new process rigor determined by state leaders and control agencies developed in an attempt to minimize the State of California's risks.

Previous research aligned generally with the findings because the study's interview questions regarding the process quadrant were quite specific to California. Research most relevant were studies about organizational management, change management, and technology. Worth noting was the non liner progression of IT projects from the strategic concept through implementation within the production environment. The end-to-end process reflected the dynamisms embedded within strategic objectives, environmental circumstances, and team exchanges according to Hallow (2005), Henderson and Venkatraman (1999), and Powell and Snellman (2004). The discussion about specific process-related problems follows.

The first emergent data finding concerned the effectiveness of the Department of Technology's CA-PMM, STAR, and CA-PMF frameworks. The need to enhance process guidelines beyond the Project Management Institute's Project Management Body of Knowledge (PMBOK) industry standard barrier foretold of a dissonance between theory and practice. Process customization to address public sector and California requirements led to the Department of Technology's frameworks. However, IT project issues spanned the spectrum of possibilities with many problems beyond the control agency's realm of authority. Consequentially, organizational and IT project leaders selectively adopted the frameworks in parts or as a whole means to implement projects. For instance, the failure to document business processes was frequently mentioned by the CIOs as a IT project problem. Developing successful IT projects was predicated on understanding the business

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objectives. Yet, the nontechnical processes were within the purview of organizational business leaders and should have occurred prior to the IT project initiation.

The CIOs experiences revealed the inability to document what was required remained an issue despite the existence of the Department of Technology's CA-PMM, STAR, and CA-PMF project approval lifecycle. As most large-scale IT projects were driven by a business strategy, nontechnical staff were instrumental in articulating the business and functional needs, ideally before a project was approved. The scarcity of state staff with end-to-end process knowledge was increasingly becoming an issue as the baby boomer generation retired from state services said several CIOs. The void led some IT project leaders, who mostly promoted through technical ranks, to think they had comparable knowledge on intricate business policies, processes, and desk procedures. Several CIOs noted another misguided effort was the recruitment of vendors in the hope the consultants had similar knowledge as the state staff. The consultants depended on access to the internal business knowledge. However, the access was inconsistent, conditional, or restricted within some organizations.

Another CIO mentioned complicating matters was a need to capture the information in a manner the IT staff and vendors could conceptualize and develop technical solutions. As noted during the social culture and organizational strategy quadrants discussion, the relationship among lines of businesses and technical units had flaws exacerbated by the unmanaged white spaces between processes. Organizational management research found the deficiency was caused, in part, by siloed cultures' communications preferences that led to uneven, broken, or different languages (Caron & Giauque, 2006, Delanty & Strydom, 2003; Lyotard, 1996). In several organizations, an

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unproductive process resulted. Projects depended on meaningful production exchanges. Ideally, the output from one group process served as a dependable input for another process group. Instead, the CIOs reported intense discussions among the technical team about the best way to achieve the outcome. In other instances, the CIOs said that groups sought to "just get their part done" and move on to other unit tasks without considering whether the output was useful. The situation indirectly led to a decision by the Department of Technology to adopt an agile approach to implementing large-scale projects. The objective was to simplify the process by phasing in business functionality instead of attempting to "boil the ocean" as several CIOs mentioned. Unfortunately, the phased approach does not address the differing opinions or disconnected process issues residing within organizations.

The second research finding concerned vendor solicitation and contracting process versus the relationship among vendors and stakeholders discussed in the social culture quadrant. In part, the process was developed from federal, state, and industry-related regulations like the Sarbanes-Oxley Act of 2002 that established public agency and corporate guidelines for the ethical solicitation, award, and management of contracts. Large-scale IT project contracts were complex and required dedicated and trained state staff to ensure the requirements were met. During the interviews, some CIOs expressed opinions such as vendors "got away" with not fulfilling contracts because of problems attributable to both the state and vendor. Process improvement was an ongoing endeavor that the Department of General Services and Department of Technology led. Actions included the engagement of the vendor community to help identify solutions that would shorten the approximate 30-month process. However, seemingly lost in the details was

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the fact that procurement and contracting were decades-old problems intertwined with the State of California's 20-year outsourcing approach. Further, the already complex large-scale IT projects tended to attract global corporations with lobbyists and legal resources available to protect the vendor and industry interests. Within the highly charged political environment, depleted and disempowered state staff were expected to master the solicitation process and manage contracts in the best interest of the state.

A CIO offered, a better means to improve the procurement and contracting processes was to learn from other projects post-implementation studies. In one instance, the CIO reported a previous project experienced minimum issues between the vendor and the state project teams. The tone about behavior was set and modeled by the leaders. As part of the organizational strategic approach, the state staff responsible for contracting were treated as essential team members. The CIO's confidence in the contract group along with the executive's expectation regarding healthy relationships between the state and vendor circumvented historical problems. When contract requirement questions arose, the contract manager and not the executives, served as facilitator among the groups and clarified concerns. The difference in approach minimized executive-level political relationships and decisions. The vendor and contract management approach empowered project participants from the state and vendor who were more intimate with the day-to-day project activities.

The third data finding concerned the recruitment and retention of IT project leaders. If, as the I quadrant disclosed that leadership mattered, then the process for recruiting and retaining IT project leaders was a problem source. California's conflicted recruitment approach was mired in process rigor and cognitive dissonance. The CIO

experiences disclosed some IT project leaders were unable to demonstrate passing knowledge of critical processes required for developing large-scale IT projects. Besides awareness about project management practices, technology, and business line mandates, no less than five control agencies processes were required to implement projects.

Within California, the recruitment of IT project leaders was guided by the statewide Department of Human Resources process, which like all control agencies was external to the organizations. Building effective large-scale IT projects teams often began with the leader's recruitment. By tradition, the Department of Human Resources job duty specifications were generic and required customization by the specific organization's personnel staff to include information about the organization and project content. The control agency's responsibility was mostly as labor relations oversight to ensure recruitment process did not violate union contracts or other related regulations.

**Technological and project management knowledge requirements**. The second control agency, Department of Technology, created the project management framework. Within California's control agency federation, the Department of Technology staff developed the CA-PMM, STAR, and CA-PMF frameworks to address state process needs not included in PMBOK and other guidelines. As such, specific job duties like reporting to the legislature and executives were added. Another frequent job duty enhancement were qualifications that satisfied expectation about knowledge and experience related to California state policies and practices, project management, business analysis, and technology. Related, the California legislature was the third control agency. The legislature's role in large-scale IT project was state-level governance to ensure projects aligned with regulatory mandates. Within this capacity, the legislature

received regular reports and hearing presentations about the project's scope appropriateness, development approach, and cost and schedule performance.

**Budget, procurement, and contract management knowledge requirements**. The fourth control agency was responsible for IT project budgets. The Department of Finance authorized project funds that were managed by the IT project leader or designee throughout the project lifecycle. The specific job duties associated with the activity was finance and accounting management. The fifth control agency involved with large-scale IT projects included the Department of General Services, which was responsible for procurement and vendor solicitation and contracts. The interest of the control agency required IT leaders' awareness about the process for managing vendors and contracts.

Without losing sight of the organizational need, the assumption was the recruitment process incorporated the comprehensive knowledge, skills, and abilities required to manage at the level expected by each control agency. Several CIOs shared that in many organizational recruitment efforts, the selection process did not reflect the intellectual and experiential requirements needed for the IT project leader role. Based on the CIOs comments, it appeared the rigor required to assess and select appropriate candidates was lacking. A CIO dismissed the recruitment process and results as "more of a badge of honor than an effective title."

Thus, the process quadrant revealed the CA-PMM, STAR, and CA-PMF frameworks had unknown effect on IT project outcomes for two major reasons. First, organizational use of the frameworks was inconsistent as disclosed during the CIO interviews. Second, IT project problem sources were many and mostly beyond the Department of Technology's control. Further, the application of previous research

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findings recommendations was a state objective seldom achieved within organizations or during large-scale IT project implementation said several CIOs. The best example of which was the external paradigm changes that sometimes required internal shifts in practices.

The importance of situational awareness to navigate the various processes and control agencies emerged as a critical leadership trait within the quadrant. The attributes needed were flexible, creative, and self-aware mindsets, which were contrary to the existing culture that recruited or promoted individuals reflecting the current risk aversion perspective remarked several CIOs. Within the current environment the CIOs said existing processes were designed to control uncontrollable environmental conditions, fluctuating political interests, and evolving technology. The well-intention control agency processes in the long-term narrowed the state's ability to adjust to changing conditions. The unintended irony was often IT projects successful outcomes resulted from an *instead of* versus a *because of* using control agencies processes. Similar to the organizational strategy quadrant, the process quadrant reflected the leadership and social culture dynamics existing within organizations. Processes asynchronous alignment with leadership perspectives, social culture relationships, and the organizational strategic cultures provided additional reasons for IT project failures. Conversely, for those organizations with successful IT project implementations, the outcome was attributable partly to adopting useful processes that complemented the circumstances.

The data findings discussion concludes with the awareness that public administration organizations and IT projects function within multiple impactful internal dimensions. This state of existence required leadership awareness about the parts, whole,

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and the intersections. A reasonable means to develop comprehensive awareness was through the leadership, social culture, organizational strategy, and process AQAL quadrants that naturally exist within organizations. The resulting information in some instances such as leadership supported the literature. In other quadrant areas like social cultures and organizational strategy, the study findings partially or did not support the previous research.

**Recommendations for Leadership**

The study documented some inglorious imperfections about California's public administration organizations IT projects. Improvements to the organizational system are necessary. However, borrowing from a CIO's comment about managing project scope, boiling the ocean is not feasible. The foremost intelligent, constructive, and responsible approach to resolving the problem is identifying what went wrong or right. The study on CIO experiences provided that content. Einstein's quote from Chapter 1 that the same level of thinking used to create problems cannot resolve them, is the next consideration (Einstein, 1995, 2006; Isaacson, 2007). A rhetorical question of *so what* leads to specific recommendations for leadership. Obviously, concentrating on the controllable internal factors like leadership instead of external environmental conditions is the recommendation to the State of California.

The starting point is developing insight into current leadership. The biographic questionnaire provided background information worth noting about the nine research participants, which may help to understand the perspectives recorded during the interviews. First, on average the participants spent almost 20 years in state service before achieving the CIO, AIO, deputy director, or IT project director role. Second, two

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participants' listed continuing leadership education coursework at the University of California, Davis and California State University, Sacramento. However, the majority identified internal State of California training through the Department of Technology's CIO Academy or the California Human Resources as the source of his or her leadership training beyond undergraduate course-work. Another CIO shared that self-directed study was a means to remain current about leadership concepts. Third, the CIOs who participated in the study were based in the organizations Sacramento headquarters. Unsurprisingly, the majority of CIOs were regional natives from the surrounding California counties of Sacramento, Amador, San Joaquin, Solano, Yolo, Sutter, Placer, or El Dorado.

By the self-admission of several CIOs participating in the study, California IT leaders were a risk-averse group who preferred to recruit or develop IT project leaders from known in-state individuals. Previous researchers found limited exposure to differing perspectives led to a hardening of perspectives, self-interest, or indifference (Andrews & Boyne, 2010; Boin & Hart, 2003; Henderson, 2004). The leadership mindset increased risks associated with IT projects by failing to recognize organizational need and develop appropriate solutions (Andrews & Boyne, 2010; Boin & Hart, 2003; Henderson, 2004). The era of cautious leadership coincided with the widespread use of technology required to enact federal and state mandates. Some CIOs said, instead of developing or recruiting public administrators who embraced technological and organizational management changes occurring within the external environment, the California state culture was to transfer IT development risks to vendors. While this happened, state IT staff performed routine legacy systems maintenance work that did not advance internal knowledge, skills,

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or abilities. The science and art of leading large-scale IT projects internally was undervalued. In the aforementioned culture, a CIO characterized the IT project leadership role and title as "an effective title."

The study found CIOs tended to identify normative leadership traits as beneficial. Exceptional traits required to lead change were mentioned infrequently. For instance, the ability to communicate was mentioned by each participant but only three CIOs identified the ability to discern or "calibrate the speed and scope of change" was an essential leadership characteristic (Birshan, Meakin, & Strovink, 2007, p. 4). Another trait infrequently discussed was an endless curiosity or possessing a sense of wonderment said a CIO. As a group, the CIOs expressed hope and doubt about the State of California's future prospects of developing IT project leaders. As a CIO said, "I will take a wait and see position." To this end, the following recommendations are made to develop IT project leaders.

**Project management job classification**. The first recommendation is the State of California needs an IT project leadership classification. Various audit and review committees have suggested this classification change. In the past, the action to create a specialized classification was slowed by negotiations among labor groups, organizational leaders, the legislature, and control agencies like the Department of Human Resources and the Department of Technology. It should be noted that an initiative to consolidate approximately 60 IT classifications will undergo hearings from unions, the legislature, and control agencies in 2017. If successful, the number of generalized classifications will decrease but specific requirements for IT project leadership will remain undefined.

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Further, while in at least one CIO's opinion IT was not rocket science, the complexity of managing large-scale IT projects within California requires a developed set of knowledge, skills, and abilities. The passive personnel development approach that waits until a need arises undercuts state messaging about the IT project leaders' roles and importance. As another CIO noted, it took time to develop the confidence let alone skills required to lead large-scale projects.

**Recruitment process**. All CIOs welcomed changes to the IT project leader recruitment process, and five discussed the problem in great detail. A summation of the issue was the inability to identify qualified candidates. Thus, the recommendation entails improvement to the existing recruitment practices while a professional class is created. A multi-analysis approach needs to be implemented to minimize candidates who are proficient at writing statement of qualifications or interviewing but unable to perform the job. In addition, starting with the Data Processing Manager III position and any classification in parallel or above (or appropriate classifications after the IT consolidation), the Department of Human Resources needs to participate on the interview panels. For IT-related Career Executive Assignment positions, an external to the state third-party human resources recruiter should participate in the review of applications, interview panel, and selection committee. These actions would balance conscious and subconscious bias of the existing group of decision-makers.

**Leadership training**. A third recommendation is IT leadership training should be required every 5-7 years. The training would be provided by an accredited university to ensure the latest concepts were incorporated into the curriculum. The subjects included should be resource management, business analysis, project management, and conflict

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management. Further, the traditional leadership curriculum should be augmented within coursework related to budgeting, strategic planning, organizational design, policy development, and ethics within public administration organizations.

**Project management accreditation**. A fourth recommendation is the State of California should require and invest in IT project leaders' project management professional certification through the Project Management Institute (PMI). The international professional group provides guidelines for project management, business analysis, and program management. PMI holds annual conferences and regular seminars that refreshes or creates new knowledge. The normalizing of general language, terms, processes, and procedures would make it easier to transfer IT project leaders among organizations. As it stands currently, the IT project leadership practices are based on organizational maturity.

**Compensation**. A fifth recommendation is IT project leaders including organizational executives and senior mangers compensation should be linked to IT projects implementation and the first three years of performance thereafter. A CIO shared that one organization had this option, which increased exponentially the executives and senior management interests in ensuring the success of the project outcome. The practice should be extended to any organization that leads or participates on large-scale IT projects.

## Recommendations for Practice

The cohabitation of traditional bureaucratic and modern organizational management principles has created an administration labyrinth within California state organizations, especially related to large-scale IT projects. Organizational artifacts from

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the bureaucratic model included vertical silos, regimented processes, and division of labor enforced by duty statements. Project management was a reflection of an evolving management theory that championed boundaryless structures, adaptive processes, and empowered knowledge workers. The latter concept initial attempted application within public administration was named New Public Management (NPM).

Caron and Giauque (2006) and Mathiason (2008) wrote NPM proposed to transform governance philosophy by implementing three integral features. The first change was empowering knowledge workers. The intent of the action was to delegate some decision-making authority from management to knowledge workers with the expectation of improved outcomes. Second, the model endeavored to inform social and organizational metanarratives concerning values, beliefs, and standards with subjective narratives. Changing external environmental conditions necessitated a need to revisit meaning and language. The challenge was redefining content and explaining the context. The third anticipated change was an expansion to a global administrative perspective that dissolved local, state, and national boundaries (Caron & Giauque, 2006; Mathiason, 2008). Leadership competency depended on a seemingly diverse resource universe.
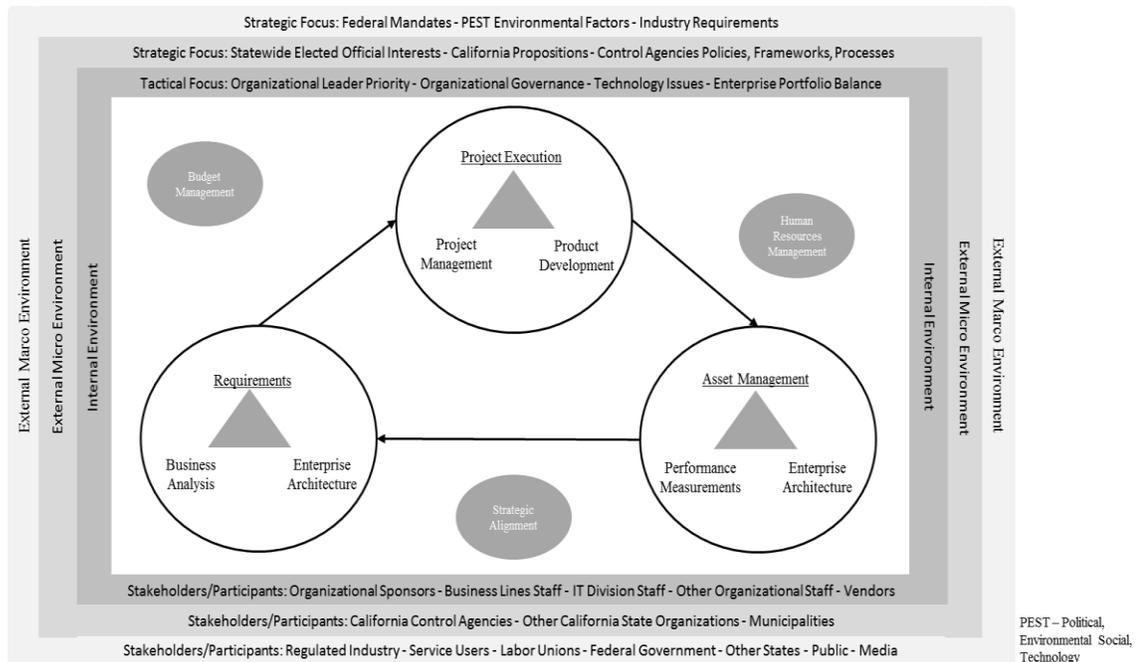
*Figure 9*. California IT project leaders' KPIs. The figure illustrates leaders' knowledge, skills, and abilities needed to lead large-scale IT projects.

NPM received a mixed reception. Parts or the whole concept was delayed, never fully implemented, or unsuccessful. Eventually NPM faded from everyday thought. Figure 9 illustrates the key performance indicators NPM marshalled in, and California IT project leaders were expected to demonstrate during the implementation of large-scale IT projects. The skills developed from a knowledge base, experience, and natural abilities. Based on the CIOs experiences in the backdrop of NPM, the practice recommendations corresponding to the key findings group themes are:

**1. Let leaders lead**. Within California state organizations, leadership equated almost exclusively to a power position and classification rank. The practice ignored the other forms of leadership within organizations based on knowledge, charisma, or ethical pedigree (Nahavandi, 2012; Yukl, 2013). Further, like the term strategic intentional or unintentional language games distorted leadership meaning within California organizations (Caron & Giauque, 2006, Delanty & Strydom, 2003; Lyotard, 1996). Oreg

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and Berson (2011) wrote leadership was not synonymous to management, especially during large-scale organizational changes. Leaders through positive explicit and implicit behavior prepared and shaped organizations, staff, stakeholders, and the public to accept change (Oreg & Berson, 2011). The theoretical description was different from two CIOs experiences where words like "bully" and "badges of honor" were used to describe ineffective IT project leadership.

Minimizing the misapplication of the leadership term is a behavioral change practice recommendation. A positive connotation for leadership should be established. The use of words like elected officials, executives, senior mangers, managers, and supervisors are more appropriate to describe the roles and responsibilities for most decision makers. Leadership should be reserved to describe individuals who exhibit servant, situational, and transformational leadership styles, no matter the position held or job classification. In this capacity, leaders influence and "stimulate" innovative behavior by transforming others "to rise above their self-interest by altering their morale, ideals, interests, and values, motivating them to perform better than initially expected," wrote Pieterse, Knippenberg, Schippers, and Stam (2009, p. 610-611).

**2. Early inclusion is a good head start**. Similar to the educational concept that promotes pre-school for toddlers to improve their chances for future educational success, the concept is applicable. Large-scale IT projects were transformative for organizations. The changes required the continuous engagement of multiple internal and external stakeholders. However, the CIO interviews revealed participation was limited and defined often by the leaders-members relationship exchanges.

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The practice recommendation is to engage stakeholders, project team members, and other participants early in the project. Dzik-Jurasz (2006) explained "…no change would take place unless they developed an understanding of each other's situations." Thus, the first action is to create a culture of *we*. By doing so, a problem remote to one group may become relevant through the contact with more effected individuals and groups. Second, the action encouraged project members to think about their roles during and after the change. Shane (2009) and Walker (2008) found positive visualization reduced anxiety and encouraged accepting ownership of the upcoming change. Third, leaders contact with the social culture helped to identify potential strengths and weaknesses that may affect the project outcome. Fourth, the exposure may identify early integrators or change agents who influence other individuals and groups (Shane, 2009; Walker, 2008). Finally, the fifth benefit of early inclusion within IT projects was limiting the cyclical team development process of forming, storming, performing, and norming that occurs automatically with each new addition (Boynton & Fischer, 2005; Lencioni, 2012; Parker, 2008; Thompson, 2008).

**3. Acknowledge the informal organization environment value**. It literally takes a village to implement large-scale IT projects. As noted in the second recommendation, the engagement of individuals and groups was essential to large-scale IT projects success. Besides the formal organization defined by hierarchical structures and pre-defined roles, an informal organization exists. In some perspectives, the informal organization was a rogue manifestation that undermined order, policies, and directives. However, the egalitarian design also facilitates sociotechnical systems' causal and personable

communications styles among colleagues (Herrmann et al., 2007; Hoque, 2011; Tsoukas & Chia, 2002; Wolf, Finnie, & Gibson, 2008).

A practice recommendation is to recognize the value of the informal organization in obtaining insight into how the organization and project is functioning. This action is different than participating in office politics, espionage, and gossip. The positive side of the informal organization helps to minimize staff isolation that often characterize and occur within bureaucratic structures. The informal culture within California public administration organizations gives a voice to the marginalized staff who may resist the large-scale IT project change. The tendency to label individuals or groups as agitators is short-sighted. Criticism does not necessarily equate to disgruntlement. In some instances, the behavior is the result of a different vision that if considered may enhance the project outcome.

**4. Demystifying sacred cows and disassembling holy grails**. Systematic organizational change required unfreezing operational designs sustained through, in part, tradition. Decision legacies of bygone executives populate California public administration organizations. The history, mostly oral, that explained the reasons for processes, procedures, or system was increasingly becoming lost as the baby boomer generation retired from state service. While few theorists and practitioners encouraged implementing change for change sake, keeping the status quo because of a sacred cow and holy grail status may also be ruinous (Gallos, 2006; Shane, 2009; Sharma & Sharma, 2010).

The practice recommendation is changing how legacy processes, procedures, and systems are assessed. The lack of documentation often meant the artifact remained out of

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fear and shortness of time required to replace the policy, system, or process. In a sense, public administration sacred cows and holy grails freeze organizations, especially if they were tightly coupled with other processes, procedures, and systems. The interrelationship increases large-scale IT projects risks. However, the time investment to identify and document the system may prove worthwhile. Consider a CIO's story about a similar action, "…we had a whole bunch of systems that needed to interface [with the new system]. And we did an honest assessment of each one as to what needed to occur in order for it to be a sustainable app. And we set it out in our plans and we did it." What was thought of as impossible and vigorously resisted by organizational participants changed with the leadership perception about value within the current environment.

**Recommendations for Future Research**

Additional research is always beneficial as it helps to affirm or identify other information. The literature library and the study limitations makes further study an imperative. General recommendations include the application of the research study question, method and design, and theoretical framework to other public and private sector organizations to determine the internal factors for IT projects failures and successes. A possible research approach is to partner with a public administration organization to develop a case study about specific projects. As the qualitative literature library grows, quantitative methods focusing on a specific quadrant could become feasible to formulate a research survey about definitive leadership traits or process-related issues affecting large-scale IT projects. Specific future research recommendations corresponding to the key findings group themes are:

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**1. Leadership matters**. The study upheld that leadership was critical to IT projects success. A personal development and career path study may provide relevant information to design future human resources policies, training curriculum, and recruitment related to IT projects leadership. The CIOs' comments implied that IT project leadership should not be a casual personnel management endeavor. However, as public administration is a dynamic construct and technology is an evolving concept, the development of a relevant professional class eluded public administration. Collecting data that improves IT project leaders' recruitment, retention, and training would be beneficial.

**2. Social culture and organizational relationships**. The study provided evidence of social isolation, which was common in bureaucratic organizations. The isolation relegated staff to mundane IT project activities while vendors performed more complex tasks. In the past, specific State of California organizations recognizing the problem developed one-off surveys to collect staff responses regarding various organizational matters. The information was one-dimensional and limited in participants. A research recommendation is to develop a series of studies focusing on the social culture and relationship emergent themes. For instance, participants from different organizations and projects could participate on a research panel focusing on staff preparedness or how staff is used on IT projects. The data findings may lead to better utilization of state staff.

**3. Organizational strategy, structure, and management alignment**. An interesting finding from the study was the juxtaposition of strategic and tactical planning. A research recommendation is for a non profit public policy institution or a university to develop a study about strategic planning within public administration organizations.

Participants would include federal, state, and municipal organizations from within the United States. The study's purpose would be to explore whether the organizations engaged in strategic activities as defined by organizational management theory research. A secondary research question or separate study would examine how the organizations do strategic planning, if participants answered in the affirmative to the first question. The research may help to improve the cognitive dissonance between organizational management theory and application.

**4. Process bureaucracy**. Processes are worthwhile organizational artifacts if they reflect business needs. Legacy processes often subtract from the output production value. A research opportunity exits to examine specific functional processes to determine the value in a sociotechnological environment. For example, a study could include budget personnel who discuss the management of IT project budgets in context to other responsibilities. A research question maybe *if the process different or the same*? The research may help to support or demystify that IT projects require different budgeting knowledge, practices, and systems. If the latter is the case, then the need for multiple control agencies issuing IT project budget mandates could be streamlined or discontinued.

**Reflections on Research Limitations**

Three significant limitations existed for the qualitative narrative study examining the CIO perspective internal organizational factors that influenced large-scale IT projects using the California's statewide mandated frameworks to determine why IT projects failed or succeeded. A variety of inherent and researcher-defined parameters established the research boundaries for investigation. For a complete list, refer to Chapter 1 and 3

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limitations and delimitations sections. An inherent limitation that required the establishment of a researcher-defined parameter was the vast number of affected organizations. Problems with IT projects existed in both the public and private sector organizations no matter the industry as noted in previous chapters. The previous research findings reported IT project failures within countries like the United States, Poland, Singapore, Brazil, Australia, France, Germany, Canada, South Africa, England, and Romania. For the study, to ensure the problem was researchable, limitations were imposed based on project type, organizational type, and public sector. The focus on California state public administration organizations added to the research field but also illustrated the problem capturing the entire or majority of the effected group. The decision to design research to account for situational differences or to remain open limits research one way or the other. Narrowing the scope to examine specifics like internal organizational conditions excludes other potential organizations or participants. Conversely, a research design that is inclusive may lead to more generalities without identifying root causes like prior studies.

Another inherent parameter was the relationship between the public administration discipline and the research community. Some specific relationships existed where a previous partnership was established to develop transportation, water management, or health solutions. However, general relationships between public administration executives or managers and researchers were tenuous according to Pawlowska (2004) and Shapiro and Rynes (2005). Public administrators were suspicious of researchers motives. For the study, the limitation existed but not to the degree that prohibited the research to continue. A significant reason for the study's continuance was

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the pre-established relationship and reputation of the researcher, who was an internal

state of California manager. Several CIOs stated that his or her knowledge of the

researcher influenced the decision to participate in the study. Potential studies without the

luxury of familiarity may encounter difficulty in engaging future research participants.

**Summary**

The purpose of the qualitative method and narrative design study was to examine

CIOs' perspectives about internal organizational factors that influenced large-scale IT

projects using the California's statewide mandated frameworks to determine why IT

projects failed or succeeded. The research question was basic: What are California CIOs

internal organizational success or failure experiences implementing large-scale IT

project? A bounty of CIOs comments helped to established 14 themes. Grouped by the

AQAL theoretical framework, the data confirmed that the majority of IT project

problems arose from the internal context. More precisely, the problems were the cause of

people and process issues.

Belief that leadership still mattered was the focus of the I quadrant emergent

themes. Large-scale IT project outcomes improved with effective leaders. The ability to

manage situational conditions developed from experience, confidence, and discernment.

In addition, while normative leadership traits still remained important such as positive

attitudes and strong communications skills, exceptional leadership attributes included a

sense of wonderment. The fear of failure overshadowed several IT projects but a CIO

paraphrasing Einstein noted "Anyone who has never made a mistake has never tried

anything new."

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Social culture and relationships of all stripes emerged within the We quadrant. The emergent themes were linked by the organizations' social culture that influenced IT projects. Among the various groups were state staff, sponsors, politicians, external stakeholders like advocacy groups, control agencies, and contracted vendors. Effective IT project leaders included and managed the various group interests without compromising the project objective. The quadrant was integral to assessing organizational readiness.

The It quadrant identified emergent themes related to organizational strategy, structure, and management that effect large-scale IT projects. The data findings identified the importance of an organizational culture that had a holistic strategic vision and plan, was realistic about IT projects performance metrics, and developed an organizational structural design that eliminated vertical silos. Again, a CIO paraphrased Einstein to distinguish can-do organizations by sharing "The important thing is not to stop questioning. Curiosity has its own reason for existing."

Finally, the belief that bureaucracy continued to reign defined the Its quadrant emergent themes. California's state bureaucracy was influenced by control agencies frameworks and processes that directed IT project management, vendor solicitation, and recruitment and retention. Adherence to the policies and processes depended on the organization. Except for vendor management, the causes of failure or success was less about project management discipline than the leadership concerns identified within the I quadrant, the social culture and relationships within the We quadrant, and the alignment of organizational strategic, structure, and management elements within the IT quadrant organizational.

**Conclusions**

A photography analogy is useful in concluding the study and making the information accessible beyond the research field or practice discipline. Like photography negative exposure, the CIOs experiences about IT projects failures and successes provided meaningful details. Examining an issue through a singular lens or narrowed cropping distorts dimensional perspective. It is only when the whole is seen that the specific areas conceptual depth and relationship are understood. The same is true using a reverse examination process.

Learning comes from variety of experiences including those classified as failures or successes. In the retelling of those experiences, individuals share stories that reflect their everyday lives albeit professional or personal. The manner by which the story is retold does not necessarily reflect a negative or positive disposition of the CIOs or researcher. Instead, for researchers the importance is discerning the themes imparted in the conditions that constitute a story about an event (Rejnö, Berg, & Danielson, 2013). The process of knowing entails multiple steps to ensure the faithful capturing of individual stories and the holistic themes that emerge from the analysis (Beal, 2013).

The research about *Public Administration Relevancy: CIOs Narratives about Information Technology Project Experiences within California State Government* was an insightful journey examining individuals lived experiences. Although failures or adverse conditions may have been shared by CIOs, the interviews were positive interactions. The participants and researcher engaged as partners. A shared interest to understand the conditions that affect large-scale IT project outcomes encouraged the CIOs to reflect on

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politically sensitive topics. Their responses helped to affirm or disclose factors that affect large-scale IT projects implementation.

Therefore, the study clarified the macro and micro external environments, which explained what and why public administration organizations concentrate on specific strategic endeavors. Most informative was the internal environment as it defined how leaders guided internal and external participants like staff, stakeholders, and partners through processes to achieve strategic objectives. Within each quadrant, problems existed. However, the information imparted suggested many problems are changeable by adopting relevant internal organizational cultures, structures, and practices within California organizations. As such, the leadership and practice lesson returns to Einstein's (1995, 2006) caution that the same level of thinking used to create problems cannot resolve them.

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## INFORMED CONSENT: PARTICIPANTS 18 YEARS OF AGE AND OLDER

Dear    :

I would like to take this opportunity to introduce myself.  My name is Demetra L. Davis and I am presently a student at the University of Phoenix School Advanced Studies completing a doctoral degree in Management and Organizational Leadership.  The title of my dissertation research is *Public Administration Relevancy: CIOs Narratives about Information Technology Project Experiences within California State Government*. The purpose of my study – which uses a qualitative method and narrative design – is to examine California CIOs experiences implementing large-scale IT projects. By conducting this research, I hope to learn more about the factors that effect outcomes.

By participating in this study, you have the unique opportunity to be a part of the new knowledge creation process. As a participant, you will take part in an interview that will be administered in-person. The interview consists of 10 questions, which should take approximately ninety (90) minutes to answer. Your participation in this study is strictly voluntary and you can decide to withdraw from participation at anytime before or after the interview begins without prejudice or penalty. Although the results of this research may be published, your identity will be concealed from public view and your or the organization's name will not be made available to anyone other than me.

There are no anticipated risks associated with this study. Although there might not be any direct benefit accruing to you from your participation in this study, indirectly your contribution may have meaningful and lasting results for California and for public administration practices in general, of which you are a part. Should you have questions related to my research please contact me at (xxx) xxx-xxxx or by email xxxxx@xxx.com. Further questions about your rights as a participant or complaints or concerns, should be directed to University of Phoenix Institutional Review Board via email at IRB@phoenix.edu.

In addition, as a participant of this study understand and affirm the following:

1.  You may withdraw from participation at anytime without penalty. Please send an email to xxxxx@xxx.com stating your intention to withdraw.
2.  Your identity will be kept confidential. You will be assigned a unique control number by Demetra L. Davis. The control number and list of names that

conceal all participant identities will be stored in a bank safe deposit box in Los Angeles, California. The researcher is the key holder.

3. The researcher, Demetra L. Davis, has explained sufficiently the nature of the research and the questions you posed.

4. You must give your permission to Demetra L. Davis if the interviews are recorded. You understand that the researcher will transcribe recorded interviews. Data will be coded to assure that your identity is protected.

5. The data and transcript from the interview session will be stored in a secure Sacramento, California private office safe that is accessible only to Demetra L. Davis. The data, recordings, and transcripts will adhere to a three-year retention period per standard research policy. The protocol ensures the researcher is accountable and a responsible steward of research data/artifacts. The researcher will erase the recordings at the end of the three-year retention period. The researcher will submit the erased tapes along with all other material to a reputable confidential destruction company like Iron Mountain (http://www.ironmountain.com) to shred. Finally, to ensure confidentiality, third parties will not have access to raw data or information that could lead to the participants' identification.

6. The findings from the research may be published.


**Acknowledgement**

"By signing this form, you agree that you understand the nature of the study, the possible risks to you as a participant, and how your identity will be kept confidential. When you sign this form, this means that you are 18 years old or older and that you give your permission to volunteer as a participant in the study that is described here."


(☐) I accept the terms above.        (☐) I do not accept the terms above.


Signature of the interviewee _____Date _____


Signature of the researcher _____Date _____

**Participants Identification**

- Research participants were identified from the Department of Technology list of

  CIOs. The URL for accessing the list was

  http://www.cio.ca.gov/Government/It_Directory.html. Under the heading

  "California IT Directory". The researcher selected the fourth bullet labeled "State

  AIO/CIO List (PDF) Updated October 2016".

- An alternate means to access the list was to perform a Google search using the

  words "California CIOs List". The researcher selected the result titled

  "Information Technology Directory – California Department of Technology". The

  query directed the user to the aforementioned webpage

  (http://www.cio.ca.gov/Government/It_Directory.html). Under the heading

  "California IT Directory". The researcher selected the fourth bullet labeled "State

  AIO/CIO List (PDF) Updated October 2016".

**Participants Contact Information**

- Although the Department of Technology list did not include the CIOs' contact

  information, several options were available to obtain the information. From public

  information or follow-up calls to the organizations, the researcher confirmed the

  CIOs' email address, physical address, and telephone number.

- The first procedure to access CIO's department information through the public

  California Online Directory Employee Information – State of California at

  www.cold.ca.gov/state_employees.asp. Using the Quick Links *Agency*

  *Information*, the researcher clicked, and then selected the organization. From

there, the researcher scrolled until the organizational name was located. The specific organizational list opened with a list of officials. The researcher scrolled until the CIO's name appeared.

- The second procedure was to access specific CIO information through the public California Online Directory Employee Information – State of California at www.cold.ca.gov/state_employees.asp. Using the Quick Links *Employee Information*, the researcher clicked, and then typed the CIO's name when prompted.

- A third optional procedure performed a Google search by the CIOs' or agency name. The researcher selected the appropriate search result. Finally, the last optional procedure performed was a Google search by the organizational name. The query led the researcher to the organization's webpage. The researcher located the "About Us" link within the top banner and selected the "Contact Information". The information provided the organizational address and main telephone number.

**Permission to Recruit and use Neutral Location**

- The State of California's Department of Technology CIO on behalf of the all participants granted permission for research (see Appendix C).

- Another PRN from the University of Southern California granted permission to use the university's State Capital Center premises to conduct the interviews (see Appendix C).

**Letter of Introduction**

- Email the letter of introduction, which contained language explaining the research

purpose, researcher's university affiliation, participant eligibility criteria, participant's research time commitments, research location, and the researcher's contact information (see Appendix A).

- Although planned, a follow-up mailer using the United States Postal services was unnecessary. The language within the emailed letter of introduction would have been converted into a formal letter and mailed in an envelope marked *confidential*.

- A follow-up call by the researcher within five business days from the email sent date confirmed research participants' interests.

**Contact after Participant accepted Research Invitation**

- After the CIO agreed to participate in the study and an interview was scheduled, the researcher provided via a secure email account the informed consent (see Appendix B), biographic questionnaire (see Appendix F), and interview questions (see Appendix G).

- A Microsoft Office private calendar meeting was sent to the participant with the interview date, time, location, and parking instructions.

- The day prior to the interview, a secure email from the research account was sent reminding the participant of the interview date, time, location, and parking instructions.

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# Appendix C: Premises, Recruitment and Name (PRN) Use Permission

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## PREMISES, RECRUITMENT AND NAME (PRN) USE PERMISSION
### University of Southern California State Capital Center

*Please complete the following by check marking any permissions listed here that you approve, and please provide your signature, title, date, and organizational information below. If you have any questions or concerns about this research study, please contact the University of Phoenix Institutional Review Board via email at IRB@phoenix.edu.*

☒ I hereby authorize Demetra L. Davis, a researcher from University of Phoenix, to use the premises (facility identified above and address below) to conduct a study entitled *Public Administration Relevancy: CIOs Narratives about Information Technology Project Experiences within California State Government.*

☐ I hereby authorize Demetra L. Davis, a researcher from University of Phoenix, to recruit subjects for participation in a study entitled *Public Administration Relevancy: CIOs Narratives about Information Technology Project Experiences within California State Government.*

☐ I hereby authorize Demetra L. Davis, a researcher from University of Phoenix, to use the name of the facility, organization, university, institution, or association identified above when publishing results from the study entitled *Public Administration Relevancy: CIOs Narratives about Information Technology Project Experiences within California State Government.*

| | |
|---|---|
| **Signature** | 07/21/2016 **Date** |
| **Name** | **Title** |
| **Address of Facility** (include URL if Website) | **Phone Number** |

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## PREMISES, RECRUITMENT AND NAME (PRN) USE PERMISSION
### State of California Department of Technology

*Please complete the following by check marking any permissions listed here that you approve, and please provide your signature, title, date, and organizational information below. If you have any questions or concerns about this research study, please contact the University of Phoenix Institutional Review Board via email at IRB@phoenix.edu.*

☐ I hereby authorize <u>Demetra L. Davis</u>, a researcher from University of Phoenix, to use the premises (facility identified above and address below) to conduct a study entitled *Public Administration Relevancy: CIOs Narratives about Information Technology Project Experiences within California State Government.*
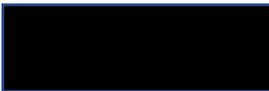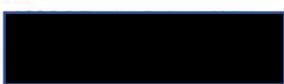
☒ I hereby authorize <u>Demetra L. Davis</u>, a researcher from University of Phoenix, to recruit subjects for participation in a study entitled *Public Administration Relevancy: CIOs Narratives about Information Technology Project Experiences within California State Government.*

☐ I hereby authorize <u>Demetra L. Davis</u>, a researcher from University of Phoenix, to use the name of the facility, organization, university, institution, or association identified above when publishing results from the study entitled *Public Administration Relevancy: CIOs Narratives about Information Technology Project Experiences within California State Government.*

█████████████████                 <u>11/08/2016</u>
**Signature**                      **Date**

████████                          ██████████████
**Name**                          **Title**

████████                          ██████████████
**Address of Facility**           **Phone Number**
**(include URL if Website)**

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Appendix D: Letter of Introduction

Dear:   :

Please allow me to introduce myself. My name is Demetra L. Davis and I am presently finishing a doctoral degree in Management and Organizational Leadership at University of Phoenix's School of Advanced Studies. A dissertation is required to complete my degree and for that, each student must conduct a research study. My research area is public administration leadership. The title of my research study is *Public Administration Relevancy: CIOs Narratives about Information Technology Project Experiences within California State Government*.

The public administration leadership challenge is providing value to diverse stakeholders, who include the public, politicians, internal program managers, the specific industry regulated, and external business partners. Increasingly, IT projects are the means to deliver quality services and products. The need for rapid IT project implementation without diminishing quality or value is a change management rubric. To this end, the purpose of my study is to examine California CIOs experiences implementing large-scale IT projects. By conducting this research, I hope to learn more about the factors that effect outcomes.

I am seeking volunteers from Chief Information Officer, Agency Information Officer, Project Director, or like positions to participate in this study. If you agree, you will participate in a one-on-one interview with me. Of course, participation is 100% voluntary and you have the right not to participate or withdraw at any time without prejudice or penalty. The information that you provide will remain confidential and findings may be published without identifying you, the project(s), or the organization.

Your participation will help to advance academic understanding about leadership and organizational management that is unique to California, public administration, and IT projects. In combination, this information is lacking within the current research literature. The one-time 90-minute interview will occur at the University of Southern California State Capital Center. The location is 1800 I Street, Sacramento, CA 95811. Arrangement for parking will occur once the interview date is scheduled.

For your convenience, I have enclosed a Resume Vitae along with a copy of the biographic questionnaire and interview questions. If you agree to participate, you and I will sign an Informed Consent that details the measures to maintain confidentiality and your rights as a research participant. You will receive the Informed Consent several days prior to the interview. You may contact me at (xxx) xxx-xxxx or by email at xxxxx@xxx.com if you have questions. However, we will review the Informed Consent at the beginning of the interview.

Thank you in advance for considering this request for participation in this study. It is understood you have many demands on your time. I will follow-up on this request within five business days from the imprinted date.


Respectfully,

Demetra L. Davis
Doctoral Candidate
University of Phoenix

## Appendix E: Participant Biographic Questionnaire

*Date:* _____          *Participant #:* (Assigned upon participant agreement)

1.  What is the city and state that you resided in until high school graduation?

2.  Do you reside in one of the following counties: Sacramento, San Joaquin, Solano, Yolo, Sutter, Yuba, Placer, Nevada, El Dorado, Amador, or Calaveras counties? If yes, which one?

3.  Did you attend college? If yes, where? What was your major?

4.  Did your degree program include leadership, business management, or public administration coursework?

5.  Do you have formal project management training or certification, i.e., Project Management Professional, Department of Technology, or third-party provider? Please specify.

6.  Within your State of California employment, did you promote within the IT classification ranks to achieve your current position? If yes, how many years did it take to achieve your current position level?

7.  How long have you served in your current position?

8.  How many years of executive management or leadership experience do you have?

9.  How many years of experience directing State of California information technology projects?

*Date:* _____          *Participant #:* (Assigned upon participant agreement)

1.      Tell me about your background in leading IT projects.

2.      Please describe for me the leadership traits that you found most or least beneficial

        for implementing IT projects?

3.      Based on your experience, what made IT projects fail or succeed?

4.      Please describe how individuals within functional groups participate in IT projects

        that lead to success or failure?

5.      Complete this sentence, if an IT project has problems the project team and

        organizational response is *x*.

6.      Please tell me as much as possible about the organizational strategic perspective

        that establishes priorities and influence success or failure?

7.      Walk me through your organization's IT project governance process that provides

        the foundation for success or failure.

8.      What is your organization's IT project implementation process?

9.      How is CA-PMM, STAR, and CA-PMF frameworks integrated into your internal

        processes?

10.     What is the lesson learned about California's large-scale IT projects based on

        your experience, education, and training?

# Appendix G: Researcher's Transcript Review Process

1.   The researcher prepared the audio recordings by creating a separate recording inventory log using the automated number generated by the recording equipment and the participant number assigned by the researcher.

2.   The researcher transcribed the interview audio recordings and encoded the Word document with the participant code, interview date and time, research title, and speaker identification as *I* for interviewer and *P* for participant.

3.   The researcher reviewed each Word document while listening to the audio recordings and written notes to ensure an accurate representation of the participant's responses.

4.   The transcripts were finalized using a Word document rich text format that included the participant code, interview date and time, research title, and speaker identification as *I* for interviewer and *P* for participant.

5.   The researcher formatted the QSR NVivo software with the participant code, interview date and time, research title, and speaker.

6.   The researcher inputted each interview transcript document into QSR NVivo.

7.   The researcher finalized the Word document for participant review by using the audio recordings and written notes to ensure an accurate representation of the participant's responses.

Appendix H: Participant's Transcript Review Instructions

Transcript Acceptance

1.  Research participant reviews the transcript from his or her interview.

2.  Research participant types in the email subject heading: Transcript Acceptance

3.  It is recommended the research participant uses the following email language
    without italics:

*I*, [research participant's name and title], *reviewed the attached interview*

*transcript for the study on Public Administration Relevancy: CIOs Narratives about*

*Information Technology Project Experiences within California State Government. The*

*transcription is a faithful representation of my responses to the biographic and interview*

*questions.*

4.  Research participant returns an acceptance notification along with the reviewed
    transcript to the researcher's secured email address.

Request for Transcript Edits

1.  Research participant reviews the transcript from his or her interview.

2.  Research participant types in the email subject heading: Transcript Edits

3.  It is recommended the research participant uses the following email language
    without italics:

*I*, [research participant's name and title], *reviewed the attached interview*

*transcript for the study on Public Administration Relevancy: CIOs Narratives about*

*Information Technology Project Experiences within California State Government.*

*Attached is the transcript requiring edits. My availability for clarification, if needed, is*

[date and time, preferred expeditious communication mode like email, telephone, or in-person].

4.  Research participant returns request for edits notification along with the reviewed and edited transcript to the researcher's secured email address.

Appendix I: Interview Process Protocol

1.   The audio recordings and documents used for written notes included the research
     title, interview date and time, and the participant's confidential code. This
     information was also included on the biographic questionnaire.

2.   The researcher began each interview with a statement concerning measures to
     protect the participant's confidentiality. Actions included signing and retrieving
     the Informed Consent (see Appendix B) and Biographic Questionnaire (see
     Appendix F).

3.   The researcher asked the participant if he or she had any questions.

4.   The researcher asked an introductory icebreaker.

5.   The researcher asked participants the semi-structured questions.

6.   As appropriate, the researcher asked follow-up open-ended questions to clarify or
     gain further insight into participant responses.

7.   After the questions were completed, the researcher asked if the participant had
     any questions or wanted to provide further comments.

8.   The researcher provided a projected timeline for transcribing the interview and
     emailing the document to the participant. Included in this communication was
     brief participant instructions for reviewing the transcripts, editing, and accepting
     the transcripts via email.

9.   The researcher provided to the participant an overview of the research process
     next steps including data analysis, developing a findings report, and publishing.

10.  The researcher restated the measures to protect the participant's confidentiality.

11. Finally, the researcher expressed appreciation for the participant's interest, time, and candor.

12. The interview concluded.

Appendix J: Research Data Findings Summary

Leadership or I quadrant: Leadership Matters

- Experienced IT project leadership improved outcomes but was rare.

- Majority of IT project leadership emerged from technical ranks.

- Normative leadership traits were deemed as beneficial in identifying leaders' attributes.

Social Culture or We quadrant: Organizational Internal/External Dynamic Relationships

- Sponsors' buy-in was critical to IT project success.

- Vendor roles, relationships, and power created tension.

- State staff was ill-prepared to manage or participate on large-scale IT projects.

- Internal staff use and relationships were governed by bureaucratic traditions.

Organizational Strategy or It quadrant: Strategy, Structure, and Management Alignment

- Strategic planning was inconsistent within organizations.

- Organizational denial about IT project health existed.

- Vertical silos persisted.

- Lack of awareness about strategic scope or footprint.

Process or Its quadrant: Bureaucracy Reigns

- The CA-PMM, STAR, and CA-PMF had unknown effect on IT project outcomes.

- Vendor solicitation process and management was archaic and disadvantaged the State of California or vendor.

- Recruitment and retention of qualified IT project leaders was difficult.