

Exploring the Selection of Organizational Learning Inputs in a US based Services Firm

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Approval Page

Exploring the Selection of Organizational Learning Inputs in a US based Services Firm

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Abstract

Customers demand more of businesses. Obstacles to satisfying customer demand abound. Market fluctuations, volatility, and uncertainty combine with the speed of technology, competitive threats, and talent constraints, to challenge company leaders at the helm of their organization with the goal of navigating obstacles and operating with a competitive advantage. The problem examined herein involved the overlooked connection between innovation, learning, and knowledge. Without holistic understanding the connection between knowledge and innovation/competitiveness, organizational leaders unknowingly left spend, productivity, and innovation at risk, and thus, their assets underutilized. To contribute to solving this issue, this qualitative, single case study, conducted with a US-based software-services firm, focused on the identification of vital components needed to form an Organizational Learning Inputs (OLI) framework, which is the framework necessary to guide the selection of content essential to sustain ongoing learning initiatives that the firm deems necessary to support strategic plans and innovation, thought to impact the overall competitiveness or success of the firm. The development of an OLI framework concentrated on filling a knowledge gap that previously hindered a holistic understanding of Organizational Learning (OL) and the relationship to competitiveness and innovation. In anticipation of a new or elaborated theory, the research design included grounded theory and case study methods designed to answer research questions and provide a baseline of qualitative data where little existed. The results of the analysis provided an initial description of the most significant components and process utilized to determine OLI. Moreover, results supported an elaboration of 4I and 5I OL frameworks. Themes observed that inform and unified the OLI process included strategy, innovation, productivity, compliance, and tacit knowledge v. explicit knowledge. Application of the findings in practice or

research provides a path to connect the interplay of knowledge, learning, and innovation. This interplay is critical, as it leads to improved competitiveness for the firm. Future research should exploit the opportunity to develop new or elaboration of theory and frameworks.

Dedication

I am thankful to God and my family for the gifts that fueled this endeavor. In my humble opinion, accomplishments are the outward expression of a tremendous support system. My accomplishments, this dissertation included, are owed to an exceptionally supportive, loving, and inspiring spouse. incredible children that always challenged me to be my best, an incredible co-parent and friend, and grandchildren that make my heart sing. Thank you, Bren. Richard, Matthew, and Michelle.

Thank you to Dr. Richard Vestewig for the guidance and support shared throughout my doctoral and dissertation process. Your coaching and insights helped tremendously. My thanks and appreciation to the friends, colleagues, and professionals that took the time to participate in this endeavor.

I dedicate this honor to my grandparents and my father. Without the unmitigated love I knew from them, I would not have had the courage to be my best. Even on my worst day, they thought me to be capable of anything.

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Chapter 1: Introduction

An organization cannot sustain a competitive position and meet its strategic mission unless it persistently adapts and innovates (Porter, 1991). Innovation has been defined numerous times in scholarly research, perhaps not more classically than when Drucker, in his seminal research on innovation, posited innovation as a means of empowering entrepreneurs to ideate and create or find new revenues streams with new products, services, or offerings (Drucker, 1985). In later, iterative research, Drucker related innovation to value creation and prosperity related to new value channels or innovative employment of existing value channels (Drucker, 1998).

Background

Inherent in strategic planning and innovation are critical components of strategic and competitive advantage, each driven by the ability of an organization's stakeholders to anticipate customer needs, demand, and preferences (Bose & Ye, 2013; Kitapçı & Cömez, 2016). An obvious anecdotal deduction of the body of literature posits that any possible anticipation of customer need requires some advanced understanding of the industry or market that must be fed by knowledge, both tacit and explicit. Identifying, integrating, and transmitting tacit and explicit knowledge for the organization is a critical task for management to achieve and instill in the organization (Arif, Egbu, Malik, & Khalafan, 2009; McKenna, 2006). Achieving the goal of translating knowledge into innovation and productivity happens if the organization is continually learning (Nonaka & Takeuchi, 1995) i.e., adapting in response to stimuli from the environment so that the organization is always ready for the next challenge. However, for the learning/change/adaptation process to be effective, the inputs to OL, specifically, the discovery, selection, and validation of OL (herein referred to as OLI) must be intuitive and timely (Crossan, Lane & White, 1999; Herrera, 2015). Otherwise, the most effective OL implementation may

only further instill an ineffective and strategically irrelevant position, and at the same time falsely convincing management and stakeholders that an effective OL protocol is in place. Without understanding how to tactically connect OL to a valuable outcome, such as increased earnings or competitiveness, stakeholders lack the ability to understand their organization's OL value and thus may imprecisely award or withhold OL of key resources (Li & Liu, 2014).

Statement of the Problem

Research and practice overlap on the important matter of OL and the consequences of failing to possess sufficient knowledge to provide subject matter expertise required by the market to create quality, innovation, or value (Kitapçı & Cömez, 2016). The overlap, anecdotally, seems to be driven by a desire felt by market participants to both understand and execute business strategy and innovation plans that lead to sustainable competitive advantage (Ferauge, 2012; Mintzberg, 1994; Porter, 1991; 2008). Failure to innovate or respond to threats may impact a firm's ability to sustain competitive advantage (Li & Liu, 2014). Management theory, as it relates to OL, references the implications of strategy, quality, innovation, technology, and competitiveness, yet the matter of what actions to take and the process of how to build an OLI framework remained a gap until this study was completed (Baden-Fuller & Haefliger, 2013; Baltar, 2013; Kitapçı & Cömez, 2016). Indeed, the current body of knowledge and supporting literature holds little insight for how an organization should select critical inputs to create or sustain a productive OLI framework and how to address the consequences of a disaster stemming from failure to possess sufficient knowledge required to address vulnerabilities exposes to competitors and market conditions (Dückers, Frerks, & Birkmann, 2015; Salunke, Weerawardena & McColl-Kennedy, 2013). The problem this research sought to address involved the overlooked connection between innovation and knowledge. Without plentiful research, tools

and options to holistically understand the connection between knowledge and innovation, organizational leaders risk underutilizing the learning assets of their firm by investing them in content poorly aligned with the direction confirmed in strategic planning and innovation planning efforts (Ferauge, 2012; Herrera, 2015; Mintzberg, 1994).

Purpose of the Study

The primary purpose of this qualitative, single case study, conducted with a US-based software-services firm, focused on the connection between knowledge and competitiveness (Mintzberg, 1994). Specifically, the primary study purpose included the identification of vital components needed to form an OLI framework, which is essential to sustain ongoing learning initiatives that the firm deems necessary to support strategic plans and innovation thought to impact the overall competitiveness or success of the firm (Baltar, 2013; Li & Liu, 2014). Strategic planning and innovation are staples of strategic/competitive advantage, fueled by the ability of an organization's stakeholders to anticipate customer needs, demand, and preferences (Bose & Ye, 2013; Kitapçı & Cömez, 2016). Strategic advantage, characterized by maximum revenue attainment given the implementation of the best strategy to match customer demand and market conditions (Kaplan and Norton, 1996; Porter, 1991). Building the base for OLI must yield a connection to innovation, as innovation and competitive advantage are inextricably linked (Li & Liu, 2014). Thus, the secondary purpose of this qualitative study included an examination of the construct of firm-specific determinants of innovation and the manner that stakeholders, armed with an awareness of these innovation determinants, inform the OLI selection process and strategic planning, the basis for the future success of the organization (Ferauge, 2012; Herrera, 2007).

Theoretical Framework

Much research on OL has focused on theoretical formulations of OL, OL main components, and how OL relates to other components of an organization's mission, goals, operations and its expected influence on firm performance (Argyris & Schon, 1978; Crossan, Lane & White, 1999; Jenkin, 2013, Senge, 1990). Whether or not there is a holistic theory of OL is up for debate. Crossan & Apaydin in a retrospective on earlier work concluded that there is no generally accepted theory on OL, but there has been some progress on defining its components and on how it relates to other aspects of an organization's operation and culture (2010). Perhaps this should not be a surprise, as there are competing support and even definitions of what constitutes a theory (Gelso, 2006; Harlow, 2009)

Overall, OL theory has characteristics of both classical and contemporary formulations of theory (Crossan & Apaydin, 2010). Classical definitions of theory focus on two types: inductive-synthesis (called a concatenated theory) and hypothetical-deductive (called hierarchical theory) (Heinen, 1985; described by Gay & Weaver, 2011, p. 25). Hypothetical-deductive theory, associated with quantitative research is an avenue to understanding objective reality (Crossan & Apaydin, 2010). It is top-down, moving from the theory through testable hypotheses, and evaluating the theory based on quantifiable experimental results, using objective, scalable measures and statistical techniques for analysis (Heinen, 1985; Gay & Weaver, 2011; Gelso, 2006). Moreover, good theory will include (just to name a few), critical virtues such as testability, uniqueness, and generalizability (Dubin, 1978).

The hypothetical-deductive method generates hypotheses based on the theory, determining reliable and valid ways to measure and observe the concept-variables in the theory (Gelso, 2006), performing an experiment using real-world phenomena to generate data, and

evaluating the results as confirming the research hypothesis or not, or, often, partially confirming the research hypothesis (Heinen, 1985; Gay & Weaver, 2011). The results inform whether the theory is correct or requires modification to account for the data (Dubin, 1978; Gay & Weaver, 2011). To the extent that the basic requirements of statistical, empirical research are met, especially in the characteristics of the sample, the theory can now generate explanations and predictions which are generalizable to other instances in the theory's domain (Cozby, 2009). The process is iterative, allowing ongoing hypothesis and test to refine the theory toward more accurate prediction of relevant phenomena (Corley & Gioia, 2011).

Inductive-synthesis, also called grounded theory (Gay & Weaver, 2011), implicitly criticizes the hypothetical-deductive approach in that a top-down theory cannot have applicability without an initial thorough understanding, description and definition of the real-world phenomena the theory attempts to explain (Gelso, 2006). Rather than the top-down orientation of the hypothetical-deductive approach, inductive-synthesis is bottom-up, begins with observations and data, and generates theory only after sufficient data are collected to provide a reliable base for generalization (Heinen, 1985; Gay & Weaver, 2011). The process moves from data to theory and then back to test and modify. An important difference from the hypothetical-deductive approach is in the inductive-synthesis approach to data. Where the hypothetical-deductive approach demands quantitative data, the inductive-synthesis approach values both quantitative and qualitative data, the inductive-synthesis approach need not be quantitative, and in general emphasizes qualitative data are more important since they allow for richer description, insight, with the participants influencing both objective and subjective meaning (Heinen, 1985; Gay & Weaver, 2011). By accurately understanding what is occurring in a particular, constrained situation, including the actors' impact, inductive-synthesis develops theory very close to the data.

Inductive-synthesis often uses case study and interview as a research method, believing that a detailed analysis of an idiosyncratic event can lead to richer understanding (Cozby, 2009; Gay & Weaver, 2011).

Organizations are inherently interactive since the entire existence and operation of the organization consists of participants, in their varying roles, responsibilities, personal and professional goals, and authority acting and reacting with each other in pursuit of shared organizational goals (Li & Liu, 2014). Interaction occurs at all individual levels, between levels, and especially at strategic planning levels where participants' contributions come together for an integrated forward plan. Therefore, both hypothetical-deductive and inductive-synthesis are likely to be inadequate as stand-alone paradigms for the study of OL, especially in its knowledge sharing aspects, since OL uses and is impacted by interactions at all levels and by the culture of the organization. The organization essentially constructs itself by its interactions, so the participant's environment in the organization is both lived in and developed by him and the others. Consequently, an additional type of theory is necessary for this research in OL and OLI. This theory is a social constructivist theory. Social constructivist theory, described in Stam (2009), assumed that the "reality" of the environment constructed by its participants. There can be different realities for different participants. The social constructivist approach challenges both the hypothetical-deductive and inductive-synthesis approaches, which both assume an objective reality (Stam, 2009). However, if some degree of shared reality in the organization can be assumed to exist, social constructivism is an important additional theoretical tool when one is interested in research on organizations, where the interaction of individuals and how they construct their organizational environment is a relevant input to understanding organization dynamics.

A constructivist approach assumes that there is no objective reality, but rather that different realities are “constructed” by individuals influenced by context, their prior experience, learning, motivation, and goals. There are therefore multiple individual realities, and the researcher and the participant interact to construct the reality that the researcher seeks to enumerate (Hayes & Oppenheim, 1997). The ontological, or nature of reality, and the epistemological, or the acquired knowledge of that reality, must take into account the individual realities of the researcher and the participant in the research to explain the constructed reality that is the product of the research (Hayes & Oppenheim, 1997).

Mills, Bonner, and Francis discussed the relationship and interplay of grounded theory and constructivism. The partial reliance on qualitative data, including participants' open-ended answers to either provided questions or free-form discussion, directly expresses that the data constructed by the participant is a valid input to the development of theory (Hayes & Oppenheim, 1997). Note, also, that quantitative responses, based on the interpretation of the questions by the participants, may result in varied perspectives (so the direct comparison of quantitative data may also be controversial) (Mills, Bonner & Francis, 2006). Mills, Bonner and Francis contended that grounded theory and constructivism are linked; research with a grounded theory base must address the constructed aspects of the data, and also take advantage of the insights that the constructed realities of the participants can offer to an eventual theory (2006). Learning is implicitly constructivist. In a study on knowledge retention, Arif, Egbu, Malik and Khalafan (2009), following many other researchers, made a distinction between explicit knowledge and tacit knowledge. Tacit knowledge is “wisdom” (p. 93; Hayes & Oppenheim, 1997). Indeed, codification and transmission of wisdom to others in the organization are critical so that the expertise of long-time members of the organization is not lost (Theodorakopoulos &

Figueira, 2012). By definition, tacit knowledge is idiosyncratic and bottom-up, based on integrated experience and wisdom typically gained over the duration of a career, and is difficult to communicate to others (Arif, Mohammed & Gupta, 2015). Consequently, tacit knowledge, constructed by its owner into an expression of expertise, which is unique to him and is therefore resistant to codification and easily accessible explanation (Arif, Mohammed & Gupta, 2015). The constructed aspect of tacit knowledge, the unique “reality” of the individual Subject Matter Expert (SME), is one reason that converting tacit knowledge into explicit is controversial (Hayes & Oppenheim, 1997). Thus, the knowledge institutionalized via a thoughtful OL system includes an important component that OLI must address, has both grounded theory and constructivist aspects addressed in this study. For these reasons, constructivism and grounded theory are both central to the study of OLI made the subject of this research. Note, however, that explicit knowledge also is constructed by the individual (Arif, Mohammed & Gupta, 2015). The organization’s standard and accepted procedures and basic how-to, which are the central components of OL, are interpreted and used differently by each employee as he or she performs the responsibilities of the organization (Crossan & Apaydin, 2010).

A theoretical basis for knowledge acquisition and sharing can be derived from interaction with others by way of activity, context, and culture (Lave & Wenger, 1991). An interesting theoretical beach head for the OL imperatives of intuiting and tacit knowledge, situated learning theory is a common theoretical application in the workplace (Jugdev & Mathur, 2013). The research on OLI exploited the capabilities of each of these theoretical approaches. Since the inputs (OLI) to an OL program overlooked by the current body of knowledge/literature, the approach planned determined common factors among variables assessing aspects of OLI, with the initial goal of finding a small number of independent components to summarize important

areas for further research on OLI. This approach was inherently inductive-synthesis, as the research design utilized a bottom-up, data-first methodology to identify potential theoretical concepts that are close to the data (Heinen, 1985; Gay & Weaver, 2011). Although this study is not classically hypothetical-deductive, in that it built up from data rather than developing hypotheses for test from theory (Eisnhart, 1989), the approach and design was based on previous research and theory on OL and are explicated and refined using the qualitative data collected in the case study and in the interviews. This study relied on the tenets of social constructivist theory, since the factors are dependent on how participants structure the interrelationships of the variables, and thus they are constructing the OLI reality in their organization (Mills, Bonner & Francis, 2006). Case study and interview are especially useful in discovering and explaining social constructivists aspects of theory (Yin, 2003, 2014; Ridder, 2017), and were thus employed in this study as well.

Nature of the Study

The study examined how the OLI process is performed and how OLI content and process is generated in relationship to innovation determinants. Data was obtained from a case study method that focused on interviews with executives contributing to their organization's OL initiatives in different roles and responsibilities. The results of the analysis provided an initial description of the most significant components, themes and process used to determine OLI. Further, suggested future research advance a theory for OL that included the impact of OLI on a firm's organizational readiness and competitiveness. This study identified important components of OLI, a compendium of OLI topics as they related to planning. The study relied on existing theory and research in OL, both classical OL theory and contemporary developments engendered by technology and contributions from social media.

Research Questions

The base of theoretical milestones in extant literature and the purpose of the research informed the design and selection of research questions. Specifically, the research question design supported the primary study purpose that included the identification of vital components needed to form an OLI framework, which is essential to sustain ongoing learning initiatives that the firm deems necessary to support strategic plans and innovation. Strategic planning and innovation are staples of strategic/competitive advantage, fueled by the ability of an organization's stakeholders to anticipate customer needs, demand, and preferences (Bose & Ye, 2013; Kitapçı & Cömez, 2016). Strategic advantage, characterized by maximum revenue attainment given the implementation of the best strategy to match customer demand and market conditions (Kaplan & Norton, 1996; Porter, 1991). Building the base for OLI must yield a connection to innovation, as innovation and competitive advantage are inextricably linked (Li & Liu, 2014). Thus, the secondary purpose of this qualitative study included an examination of the construct of firm-specific determinants of innovation and the manner that stakeholders, armed with an awareness of these innovation determinants, inform the OLI selection process and strategic planning, the basis for the future success of the organization (Ferauge, 2012; Herrera, 2007). A relevant case study focused on OL and the extension of 4I and 5I theories from Schlagwein & Bjorn-Anderson was also utilized to shape the research questions and approach (2014).

Relevant research questions:

RQ1. How does the firm's leadership implement the processes of discovery and selection of components and content the organization deems essential for ongoing learning initiatives?

RQ2. What type of information, from what different sources, informs the stakeholders of the deterrents of innovation?

RQ3. How does the firm's leadership translate strategic planning and innovation into a strategic advantage?

These research questions were field tested with three subject matter experts before a final list of questions was formed and introduced to the study as the instrument for case study interviews (Appendix A: Interview Instrument).

Significance of the Study

OL, competitiveness, and innovation have a symbiotic relationship (Li & Liu, 2014). OL is a critical ingredient for the continued operation and advancement of the firm, as it provides a path for knowledge that supports activities taken on by leadership geared at meeting the organization's goals and mission outcomes (Huang & Jeong, 2011; Jenkin, 2013; Ng, Rungtusanatham, Zhao & Lee, 2015; Schlagwein & Bjorn-Anderson, 2014; Senge 2006; Yuhee & Takeuchi, 2010). However, the majority of the literature focuses on the implementation of OL, not the building blocks of content to support OL (Crossan, Lane & White, 1999; Jenkin 2013). Regrettably, the gap associated with the need to understand the OL framework holistically leaves practice and research missing key concepts that inform the relationship with competitiveness and innovation. Said more simply, OL without an OLI framework is a map without a compass. To fill the critical gap in the body of scholarly knowledge, this study, focused on the inputs to OL rather than on its implementation of OL. The difference between inputs and implementation is vast, as inputs address the creation and selection of content to support innovation and strategic goals of the firm, while extant literature on implementation includes frameworks and activities associated with the institutionalization of knowledge (Crossan, Lane & White, 1999; Jenkin

2013). The significance of the study is likened to a small step in a direct path to innovation and sustain competitiveness previously unknown to practitioners and researchers. The small step toward a framework for OLI will require future researchers to address the generalizability of the case study. While this single case study provided qualitative results that encourage OLI framework development, additional research will be required to reproduce results in varying industries and business models (Yin, 2003; 2014).

Definition of Key Terms

Crowdsourcing. Crowdsourcing represents the act of a company or institution taking a function once performed by employees and outsourcing it to an undefined (and generally large) network of people in the form of an open call (Howe, 2006; Estellés, González & Fernando, 2012). This network can take the form of peer-production (when collaboratively performing) but is also often undertaken by sole individuals. The crucial prerequisite is the use of the open call format and the large network of potential laborers (Howe, 2006; González & Fernando, 2012).

CxO. An employee in a chief leadership position. For purposes of this study, key CxO positions include Chief Executive Officer (CEO), Chief Financial Officer (CFO), and Chief Information Officer (CIO).

Determinants Innovation. The changes or adaptation necessary to change or develop new solutions for capacity or deliver new products; source of future prosperity for the firm (Drucker, 1985, 1998)

Innovation. The formation of new sources, channels, products, services, or ideas; or the change to existing sources, channels, products, services, or ideas that increase the value or potential to the market (Drucker, 1998; Kitapçı & Cömez, 2016).

Organizational Learning (OL). Organizational learning is the process of creating, retaining, and transferring knowledge within an organization (Crossan, Lane & White, 1999).

Organizational Learning Inputs (OLI). OLI is the process by which the organization decides, in relationship to the determinants of innovation, which skill, topics, and overall organizational direction will become part of the organization's learning culture and advancement theme.

Service-based Firm. Professional services firm. A firm engaged in selling professional services, advisory and consulting services.

Stakeholders. Stakeholders are executives within the firm charged with the responsibility and armed with the influence and authority to direct, plan, conceive, and implement OL or training.

Strategy. The process or existence of an organizational plan uniquely conceived to provide the market with products or services yielding value determined by the firm to be an acceptable return (Porter, 1991).

Summary

Strategic planning and innovation are staples of strategic/competitive advantage, fueled by the ability of an organization's stakeholders to anticipate customer needs, demand, and preferences (Bose & Ye, 2013; Li & Liu, 2014). Strategic advantage, characterized by maximum revenue attainment given the implementation of the best strategy to match customer demand and market conditions (Kaplan & Norton, 1996; Porter, 1991). This dissertation study was designed to focus on the critical importance of the inputs to OL and to further examine the construct of firm-specific determinants of innovation and the manner that stakeholders, armed with awareness

of these innovation determinants, inform the OLI selection process and strategic planning, since these are the basis for the future success of the organization.

The study was built on classic and contemporary theory and research, and considered, even anticipated, a diverse set of responses to interview questions, observations, and data from documents and records made available during the case study process. The diverse options anticipated were based on the importance of new technologies, new sources from outside the organization, and caveats stimulated from the extreme dynamism of the organization in action and the market.

Chapter 2: Literature Review

The principal sources reviewed to understand the existing body of knowledge included peer-reviewed, academic journals and presentations that focused on management theory, specifically the intersections of strategy, innovation, competitiveness, and OL. These sources of scholarly knowledge included seminal work, theoretical milestones with retrospectives, and contemporary advancements and elaborations of accepted theoretical perspectives. Additionally, classic and contemporary perspectives on grounded theory, social constructivism, case study methods, theory building, Situated Learning Theory (SLT), Ambient Organizational Learning, Total Quality Management (TQM), Resource-based View (RBV), and Agency Theory were included to provide a holistic understanding of extant literature relevant to this study.

Strategy and Innovation

Porter suggests that before a firm can begin to set strategy and chart innovation to achieve success, the firm must define the parameters of success (Porter, 1991). Porter suggested a suitable definition for success was the use or creation of an effective competitive position that resulted in competitive advantage (1991). Going one layer deeper, strategic or competitive advantage is characterized by achieving desired/maximum revenue attainment given the implementation of the best strategy to match customer demand and market conditions (Kaplan & Norton, 1996). Steep differences exist in profitability and average returns between firms for many reasons, including industry, performance, and maturity of the firm (Drnevich & Croson, 2013; Porter, 2008). As a result of the vast differences in average profitability metrics, this research operated on the assumption that an improvement in competitiveness would yield an acceptable profit for their industry, performance, and maturity. Profitability is not the only critical result of strategy, additional benefits of a smart, well-executed strategy included clarity in

direction and purpose (Mazzarol, Clark, & Reboud, 2014). The clarity in strategy, direction and purpose are critical to the firm's ability to avoid failure, indeed longitudinal studies have reported higher failure rates in firms that fail to participate in strategic planning activities and behavior (Sexton & Van Auken, 1985).

Strategy and innovation are inextricably linked, along with agency and industry-specific knowledge to a firm's competitive advantage (Li & Liu, 2014). Competitive advantage based on services the firm can provide customers in pursuance of a gain in their position within the industry must grow from an innovation process (Salunke, Weerawardena & McColl-Kennedy, 2013). Inherent within in strategic planning and innovation are critical components of strategic and competitive advantage, each driven by the ability of an organization's stakeholders to an anticipate customer needs, demand, and preferences (Bose & Ye, 2013; Kitapçı & Cömez, 2016). An obvious anecdotal deduction of the body of literature posits that any possible anticipation of customer need requires some advanced understanding of the industry or market that must be fed by knowledge, both tacit and explicit. Identifying, integrating, and transmitting tacit and explicit knowledge for the organization is a critical task for management to achieve and instill in the organization (Arif, Egbu, Malik, & Khalafan, 2009; McKenna 2006).

OL, Strategy and Innovation are related.

Strategy and innovation are imperatives for a sustainable competitive advantage (Porter, 1991; 2008). Innovation rooted at the employee level results in improved or superior competitive positions both locally and globally, thus it is no surprise that researchers have observed firms placing an emphasis on the innovativeness of employees (Husain, Mumin & Di Benedetto, 2016). On their path to innovating products and services, service-based firms form a dependency to knowledge as a strategic resource (Barrett, Davidson, Prabhu & Vargo, 2015). Service based

firms utilize different standards than manufacturing to drive innovation (Husain, Mumin & Di Benedetto, 2016). Service based firms tend to focus innovation toward resource constraints and subject matter expertise rather than product, logistics, or supply chain innovation (Salunke, Weerawardena & McColl-Kennedy, 2013). The open innovation model assumes a firm should use internal and external ideas and knowledge to innovate their products and services (Gómez, Salazar, & Vargas, 2016). Research reported that use of the open innovation model results in higher innovation performance, but also measure an increase in innovation value (Gómez, Salazar, & Vargas, 2016). Strategy, innovation, and knowledge are related concepts (Husain, Mumin & Di Benedetto, 2016, 2016; Porter, 1991). Both strategy and innovation require knowledge (Li & Liu, 2014). Knowledge, innovation, and OL are related and share many interdependencies (Husain, Mumin & Di Benedetto, 2016).

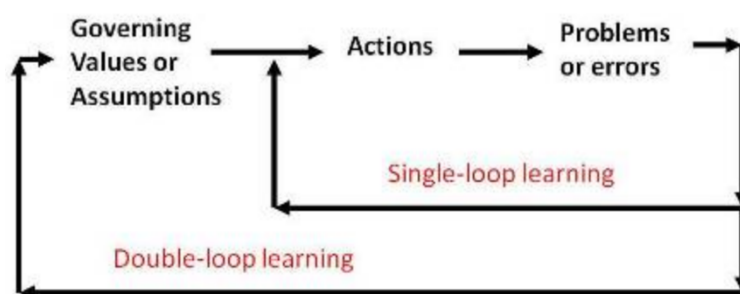
Understanding the early building blocks of OL

While many definitions exist, one fitting perspective defined OL appropriately for this study, as the experience, knowledge, and proficiency (including the potential for) available within the firm regardless of stakeholders and employees involved (Husain, Dayan & Benedetto, 2016; Senge, 1990). Another relevant approach to conceiving OL came from Bateson's research on systems theory which described learning in three levels: first level characterized as 'doing it right' as a result of learning to select the best task from a group of options, the second as 'doing the right thing' as a result of selecting the right technique to accomplish the task, and thirdly, 'choosing the right criteria' as a result of utilizing the right criteria for decision making (1972, 1978; Dillard, 2011). To expand from the individual actor, Senge's research introduced a systems element to the definition of OL believed to be valuable to in the design of learning organizations (1990). The research conducted globally from 1990 forward benefited from a base

of research that included both the individual processes and the group/system processes (Argyris & Schon, 1978; Senge 1990). Studies such as this dissertation benefitted from the co-mingling of individual processes and group/system processes, as a singular approach to learning (individual or system independent of one another) would not have offered a sufficient platform to arrive at the present in OL theory and research.

OL theories, as a collective body, have evolved from the seminal, single loop and double loop concepts introduced by Argyris & Schon (1978). Single loop and double loop learning, per Argyris and Schon aimed to understand and detect error rather than knowledge accumulation (1978). At a highly simplified perspective, an explanation of a single loop was a process wherein learning was encouraged in a manner that did not question fundamental aspects of the organization (strategy, goals), whereas, double loop learning encouraged learning accompanied by inquiries that questioned the fundamental aspects of the firm (Argyris & Schon, 1978).

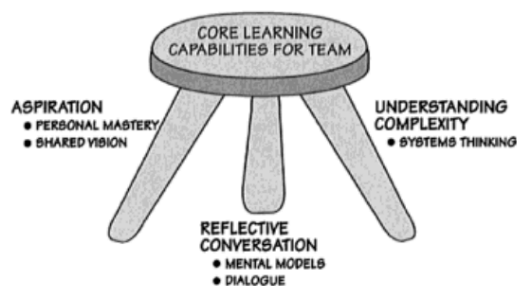
Figure 1 *Single and Double Loop Learning, adapted from Argyris & Schon, 1978.*



Since 1978, there have been significant elaboration and retrospectives conceived beyond the original theoretical base of loop learning. Senge's research, to date, is among the significant theoretical milestones addressed in OL literature. Senge's five disciplines moved the body of knowledge toward a practice of solving organizational issues rather than resolving errors (1990).

The five disciplines that Senge employed to make up his original concept of the learning organization included: personal mastery, mental models, team learning, shared vision, and systems thinking (Caldwell, 2012; Senge, 1990). In addition to the five disciplines, Senge addressed the core learning capabilities within the organization as if it were a three-legged stool (Caldwell, 2012; Senge, 1990). The core learning capabilities includes: aspiration or a shared common strategy, understanding complexity and employing systems thinking, and reflective conversation which included both verbal and non-verbal communications (Senge, 1990).

Figure 2 *Core learning Capabilities for the Team, adapted from Senge, 1990.*

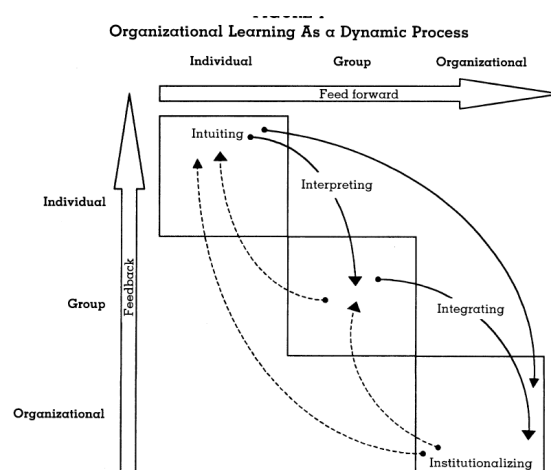


Systems thinking is a critical component of the five disciplines, and at a broader level, OL theory. Systems thinking addressed the unification or complete view of concepts rather than their sparse, unique pieces (Senge, 1990). Systems thinking, the integration of the remaining four disciplines, becomes an important part of Senge's learning organization; moreover, of how OL theory expands (Caldwell, 2012; Senge, 1990).

Senge's learning organization followed by the 4I framework introduced by Crossan, Lane & White (1999). The theoretical components of 4I were originally introduced by Crossan, Lane and White in 1999 as well as an elaboration a decade later (Crossan & Apaydin, 2010). Crossan, et al described a multi-dimensional framework for OL, called 4I for its four processes: Intuiting,

Interpreting, Integrating, and Institutionalizing. The model is dynamic and included both a feed forward and feedback processes, and addresses individual, group and organizational activities (Lawrence, Mauws, Dyck & Kleysen, 2005). The 4I process reflected on the development of OL from basic knowledge consideration to the broader ability of organizational leaders to institutionalize knowledge (Crossan, Lane & White, 1999).

Figure 3 *The 4I Framework, adapted from Crossan, Lane & White, 1999.*



A quick review of extant literature that followed the introduction of 4I, confirms the majority of 4I research addressed the latter three processes: Interpreting, Integrating and Institutionalizing (Lawrence, Mauws, Dyck & Kleysen, 2005). These three processes focus on introducing OL into an organization, validated, and eventually becomes part of the organization's learning culture (Crossan, Lane & White, 1999). The first process, Intuiting, studied less than the remaining 4I processes despite the critical nature, is defined by Crossan, Lane & White, as recognition of a pattern (even in preconscious) that the individual can sense and share with others. Intuiting is an initial step in determining important content option in the OLI framework made the subject of this research (1999). The intuiting phase is completely individual in nature, thus subjective and

based on the individual's experiences and perceptions (Lawrence, Mauws, Dyck & Kleysen, 2005). The 4I framework provided researchers a structure that connected learning and strategic renewal (Lawrence, Mauws, Dyck & Kleysen, 2005). The 4I framework held particular relevance in this study, as described later in the findings section and conclusion.

The 5I Framework, another theoretical milestone in OL relevant to this study extended the work by Crossan, et al. Jenkin (2013) suggested an additional "I," Information Foraging, as a technology-enabled source for increasing organizational learning. Jenkin views Information Foraging as a process that feeds Intuiting, and that Information Foraging is an additional "I" in the OL framework (2013).

Figure 4 *The 5I Framework, adapted by Jenkin 2013.*

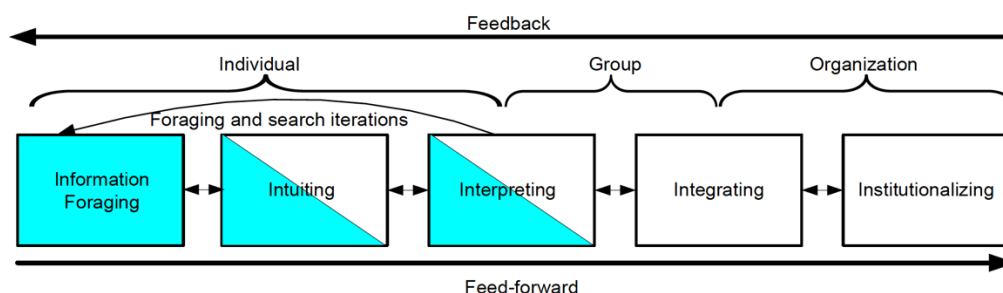


Figure four illustrates the theoretical extension Jenkin introduces to the 4I learning process in Figure three.

The still-being-explored influence of these drivers suggests also that the present interaction and definition of the 4I or 5I framework may also require modification or elaboration. Theodorakopoulos & Figueira, (2012) described the difference between "static" formulations of OL and "dynamic knowing," which emphasizes the speed of change of OL in the organization, and the growing number of options leaders possess to ensure communal learning exists. Finally,

understanding and exploiting tacit knowledge and explicit knowledge is critical to obtaining and keeping the individual, knowledge of the organizational SME; making tacit knowledge explicit sharable to others; and finally, “re-individualizing” the explicit knowledge in tacit knowledge in next generation of SME (Arif, Egbu, Malik, & Khalafan, 2009).

Knowledge Creation Theory.

To understand what knowledge is, one must first understand what it is not. Therefore, we turn to Nonaka’s Theory of Organizational Knowledge Creation (1994). Nonaka distinguished knowledge from information by defining ‘information’ as a transactional stream of messages, while ‘knowledge’, rather, was generated by the very flow of information, shaped by the duty and opinions of its possessor (1994). Nonaka stated that two types of knowledge within the knowledge creation theory: tacit and explicit (1994; Nonaka, Kodama, Hirose & Kohlbacher, 2014). Knowledge Creation Theory is predicated on the continuous conversion of tacit and explicit knowledge (Nonaka, 1994; Nonaka, Kodama, Hirose & Kohlbacher, 2014).

Intuiting and Tacit Knowledge.

Tacit knowledge is rooted in other OL theories, including 4I (Crossan, Lane & White, 1999). Intuiting, regarded as the first stage in the 4I model for OL, and begins the individual process of how OL is generated and eventually, after development and refinement, becomes an accepted and routine part of the organization’s operation (Crossan, Lane & White, 1999). Intuiting begins with the individual, and it is his knowledge that may be judged important and relevant for preserving, nurturing and sharing to the organization (Crossan, Lane & White, 1999). However, an important distinction needed to understand OL in a holistic manner, is whether the knowledge is tacit or explicit. Following McKenna (2006), Arif, Egbu, Malik, & Khalafan (2009) defined tacit knowledge as “composed of an accumulation of experience in the

form of insight and wisdom, which the person may have difficulty in communicating to others but can easily utilize in the performance of a particular task” (p. 93).

Tacit knowledge is distinctive, in that its true meaning is present in one person and cannot be described completely in terms of words or symbols (Arif, Egbu, Malik, & Khalafan, 2009). Nonetheless, the individual with tacit knowledge can expertly perform a task, even if he cannot explain what he is doing. The term SME is used to describe such a person, and his presence in an organization is critical to the success of his task and to the success of the organization. A major concern of organizations is how to retain the knowledge of SMEs after retire, are laid off, or leave the organization, since their critical tacit knowledge remains unintegrated and unable to transmit to others (Jones & McPherson, 2006).

Explicit Knowledge.

Much like tacit knowledge, explicit knowledge has evolved into OL theory beyond the Knowledge Creation Theory (Nonaka, 1994). Explicit knowledge, also present in the 4I model (Crossan, Lane & White, 1999) is the public, systemized, representable in words or symbols information that in most organizations represents best practices, and is a component of OL at all levels (Arif, Egbu, Malik & Khalafan, 2009). Arif, et al, emphasized the importance of transferring tacit knowledge into explicit knowledge. This process, often called knowledge retention in OL literature, ideally makes possible that tacit knowledge present in the most skilled individuals is codified, stored and catalogued, and is then made accessible to present and future members of the organization (2009). Explicit knowledge also must have a capability to be modified and updated as improved processes and technology evolve, and ideally also leverage inter-organizational learning and extra organization input with tools such as social media (Jones & McPherson, 2006; Schlagwein & Bjorn-Anderson, 2014; Jenkin, 2013).

The Crossan, Lane & White (1999) conception of Intuiting has much in common with tacit knowledge. Both are individual and personal, are insight experience-based, and are not directly accessible by others until there is interaction by the individual with his co-workers and other associates. When knowledge becomes explicit, and becomes describable in words, the knowledge enters the next phase of the 4I theory, Interpreting: the knowledge becomes verbal and can transmit others. At the OLI level, in which the organization determines what is important to become part of the OL process in the organization, Intuiting and tacit knowledge are critical components.

Extending the tools in OL Theory

Traditionally, the Intuiting stage uses tools limited in their scope, efficiency and reach, as would be expected in the 4I formulation in 1999, which occurred before the now accepted explosion in technology-based information gathering, analysis tools that are now the basis of modern knowledge research and dissemination (Jenkin, 2013; Schlagwein & Bjorn-Anderson, 2014). These technology tools not only extend the reach of the individual, but also greatly increase knowledge sharing capability within and organization. Addressing this deficiency Jenkin (2013) suggested an additional “I,” Information Foraging, as a technology-enabled source for increasing organizational learning. Jenkin views Information Foraging as a process that feeds Intuiting, and that Information Foraging is an additional “I” in the OL framework (2013). Information Foraging explicitly includes the order of magnitude increase in information reach that the web and social media provide, so that the number of options available for introduction into the OL process is greatly increased (Jenkin, 2013). The introduction of the Jenkin 5I framework modernized OL and future OL research on implications of social technologies (and customer relationship management (CRM) systems) that produce, gather, and synthesize large

amounts of data that may have an impact of the manner in which companies “forage” for data and learn from data (Jenkin, 2013).

Modify the OL component variables.

With the addition of an additional “I”, Information Foraging and crowdsourcing as a candidate source for OL, the traditional relationships of the 4I activity variables and how they interact in the organization may require modification (Jenkin, 2013; Schlagwein & Bjorn-Anderson, 2014). Thinking ahead for future research, social media tools, not relevant for internal organizational learning, will likely change the relationships among the variables as they change the interaction patterns of the (internal and now external) learning participants. These modern, technology-driven tools require a new look at the traditional loop processes Argyris & Schon (1978) and feed-forward and feedback formulation (Crossan, Lane & White, 1999) since the dynamism of OL in an organization may accelerate.

Extending the domain in OL Theory.

Traditional theory and research on OL has, as its domain, a single organization, an orientation which is in line with how organizations operate when the Crossan et al. (1999) The Learning Organization and 4I approach were both developed (Crossan, Lane & White, 1999; Senge, 2009). The 4I framework applied to the individual, group, and organization levels of individual organizations, and 4I activities involved only the members of that organization. The Jenkin (2013) addition of a fifth “I”, Information Foraging is also focused on one organization. However, again driven by technology and social media, OL has extended its domain to participants not in the organization. A study by Schlagwein and Bjorn-Anderson (2014) looked at how OL can be enhanced by engaging, through technology tools such as Facebook, and crowdsourcing input from participants outside the organization. The authors described how

LEGO has engaged crowdsourcing, through which the organization outsources tasks usually performed only in-house to a “crowd” of external individuals (Estellés, & González, 2012). LEGO traditionally designs products totally in-house. However, there is a large and active external community of interested admirers of LEGO products, who propose new ideas and, critical to an organization’s domain extension, discuss and trade ideas over social media (Schlagwein & Bjorn-Anderson, 2014). LEGO decided to tap into these ideas in the design of a new product. Their conclusion is that the crowdsourced input contributed to the success of the design of the new product and that the crowdsourced data became an important new component to OL (Schlagwein & Bjorn-Anderson, 2014). However, as a case study, the results of the LEGO crowdsourcing effort are not necessarily generalizable, since the LEGO design process may be exceptional and not necessarily representative or applicable to other production companies (Schlagwein & Bjorn-Anderson, 2014). Nonetheless, social media can contribute greatly to the identification of innovative OL candidates that can lead to greater organizational performance (Schlagwein & Bjorn-Anderson, 2014).

Theoretical Intersections with Organizational Learning

Total Quality Management (TQM)

There are many examples of research in literature that connect TQM to OL and competitiveness (Aminbeidokhti, Jamshidi & Hoseini, 2016). TQM involves a means to transform the firm via teamwork and the shared continually improve the quality of products and even the entire organization (Aminbeidokhti, Jamshidi & Hoseini, 2016). In order to continually improve the organization, learning must impact both the individual and the organization (Senge, 2009). Indeed, within Senge’s research, numerous associations to the theory of variation were included which informed the three components named as core learning capabilities: aspiration or

a shared common strategy, understanding complexity and employing systems thinking, and reflective conversation which included both verbal and non-verbal communications (Senge, 1990).

Ambient Organizational Learning.

Extension of theory can be a result of case study (Bradley, Curry & Devers, 2007). In addition to extending the domain of OL by using the systems centric, community fueled phenomena of crowdsourcing discovered during their case study research, Schlagwein and Bjorn-Anderson posited that the type of OL manifested with external, non-member, market participants represented a valid and efficient form of OL; in their LEGO case study results, they refer to this new form of OL as Ambient Organizational Learning (2014). The linkage to innovation exists in the categorization of feedback from crowdsourcing initiatives; the crowd is “entrepreneurial intuitive rather than expert intuitive” (Schlagwein & Bjorn-Anderson, 2014). Indeed Ambient Learning Theory and the addition of a new learning channel connected to a social ecosystem plants additional seeds for OL research in the future (Schlagwein & Bjorn-Anderson, 2014).

Agency Theory.

Depending upon the discipline (economic, management, political, legal) one may gravitate toward different references for the theory of the agency. Jensen and Meckling suggested that the myriad of references to agency theory in scholarly literature are not truly regarding a theory of the firm, but rather a theory associated with the markets in which firms interact (1976). Despite the age of the research, Jensen and Meckling’s basis for agency theory is still relevant and can be appreciated as a business context in which the principals and agents of business interact to address challenges within the agency that occur as a result of hierarchy,

competing objectives, risk tolerance, and equity, and other adversities (1976). In order to understand how knowledge is created and institutionalized, it is important to consider the theoretical underpinnings of the organization that becomes the steward of said knowledge, hence the inclusion to references of agency theory in this dissertation. Caldwell reported that practice-based learning theories are hesitant to undo the linkage between actors, individuals and agency, rather there is a detectable preference to add context and process for learning within the agency, and thus change within the agency (Caldwell, 2012). To accept this linkage, the agency must have a social context in which employees or stakeholders interact to achieve goals, and in pursuit of those goals, utilize or alter resources (including knowledge) (Nevo, Nevo & Pinsonneault, 2016). Once the social component is recognized, the agency is extended to address the informal and non-hierarchical nature of the contexts (Longo & Giaccone, 2017).

Situational Learning Theory.

Learning is not an isolated activity, unless by design. Lave posited that in order to rethink learning, one must appreciate that social and cultural constructs drive an argument of socially shared cognition (Lave, 1991; Lave & Wenger, 1991). A theoretical basis for knowledge acquisition and sharing can be derived from interaction with others vis-à-vis activity, context, and culture (Lave & Wenger, 1991). Ultimately, Situational learning Theory (SLT) and the construct of situational learning would find a definition from literature; one such definition of situational learning from Bose and Ye (2013) stated situational learning refers learning that takes place in the same context it is applied” (p. 219).

The notion of Situational Learning Theory (SLT), differentiated from classic OL by rejection of “static” knowledge and the focus on “dynamic knowing”, postulated a new manner of corporate and communal learning (Theodorakopoulos & Figueira, 2012). Their case study of

Zeta-Tech measured the relationship of variables within a subsystem of the company organizational and performance structure, referred to as a community of practice (CoP), in which learning, meaning and identity take place. (Theodorakopoulos & Figueira, 2012). This approach complicates the study of OL by adding a new approach to 4I and 5I data collection that may not easily allow comparison to previous studies, since variables are added at an individual and very small group level (Christie, Carey, Robertson & Grainger, p. 21, 2015). Although this is a reductive approach compared to most OL studies, the availability of input data from technology and social media sources to all individuals in the organization may complicate identification of OL candidates that are relevant to the organization, as a whole. However, as learning becomes more dynamic, the selection of OL candidates and how they follow the 4I and 5I process becomes more difficult, since it is harder to define a time-delimited baseline for decision.

Incorporating the SLT approach, which complicates standard variables of OL research cannot stand without review, because technology and other influences on OL call into question a mainly static orientation. Each of the three advances and their relationship to OL theory building are relevant for interpreting the results of this research on OLI and for future research. Not all complications introduced by SLT are negative. Interactions with customers and others in the marketplace, positive and negative, motivate executives within the firm to focus upon and anticipate customer needs and desires (Bose & Ye, 2013; Kitapçı & Cömez, 2016). The customer experiences begin a process that guides the organization to innovativeness that can result in the development of new products despite changing markets (Kitapçı & Cömez, 2016). Bose and Ye characterize the learning from customer experiences, a constant learning from the environment; or said plainly, situational learning (Bose & Ye, 2013). We have already heard numerous connections in literature to innovation and learning. The notion of situated learning

and the framework of SLT compliments the concept of Ambient Organizational Learning established by Schlagwein & Bjorn-Anderson (2014).

Technology and Management Information Systems (MIS).

The social/service ecosystem made the focus on research by Longo & Giaccone is related to the theoretical interactions of technology innovation and MIS related theories impacted by OL, as technology innovation requires a network of vendors, partners, and entrepreneurs. (2017; Husain, Dayan & Benedetto, 2016). OL holds a prominent place in the IT innovation process as it increases networking and collaboration within the firm and with stakeholders close to the firm (Husain, Dayan & Benedetto, 2016). Entrepreneurial activities to innovate within technology settings, often selected as a result of resources constrained circumstances, gain momentum and thus the connection to the individual and the firm is critical in both service and product-based firms (Salunke, Weerawardena & McColl-Kennedy, 2013). Research based on Technology Road Maps (TRM) theory connects innovation and patent roadmap activities to strategic planning and knowledge (Yu & Zhang, 2017). The utilization of TRMs in combination with OL result in agency methods for patent roadmap building, new patents, and innovation (Yu & Zhang, 2017). IT innovation and MIS theories that address an impact to/from a firm's innovation planning are related to collusion-based theories (Drnevich, Croson, 2013). Collusion based theories are most popular with management or business audiences, considering the impact of Porter and his competitive forces (Drnevich, Croson, 2013, Porter, 2008). In efforts to maintain a competitive advantage rooted in information technology, software, or MIS, a firm must determine the investment level necessary to maintain the capabilities advantage and continually develop enrapture and knowledge to support said advantage (Drnevich, Croson, 2013). This infrastructure base and the activities the firm takes to protect and renew the capabilities

(innovate) signal a willingness to defend the advantage to existing or new market entrants, and this becomes a part of how the firm defends and maintains competitiveness (Drnevich, Croson, 2013; Porter, 1991; 2008)

Resource Based View (RBV).

One of many contributions made by Schlagwein and Bjorn-Anderson included the connection to systems centric thinking as it related to OL (2014). Additionally, and perhaps more directly, Jenkins bridged the technology gap with the introduction of the 5th I; Information Foraging, a technology-based manner of gathering and recycling information associated with OL (2013). These examples of new connection points established in scholarly literature between OL and technology systems keep plenty of good company, as there are several scholarly examples one can point to when exploring this new relation (Battilana, & Casciaro, 2012; Fink, Yogeve & Even, 2016; Husain, Dayan & Benedetto, 2016; Jenkins, 2013; Jugdev & Mathur, 2013; KitapÇI, & ÇÖmez, 2016; Schlagwein & Bjorn-Anderson, 2014)

The OL and systems connection opens the door for a theoretical consideration of RBV, and potentially, a holistic view of OL value when associated with the value of innovation. (Husain, Dayan & Benedetto, 2016; Jugdev & Mathur, 2013). Recent researchers changed the paradigm of value to innovation and state that if OL is not utilized in the innovation value lifecycle, the use of OL could be counterproductive; indeed without the focus on innovation, the firm may suffer a decrease in competitiveness (Jugdev & Mathur, 2013) Converging learning and organizational theories to include a connection to value and a potential path to holistic measure of OL, one route recently explored is the resource-based view (RBV); firm specific intangible knowledge-based assets act as a source of competitive advantage because they tend to be critical differentiators and disruptive and expensive to imitate (Barney, 2007; Jugdev & Mathur, 2013)

Database Preference

- Ebrary,
- EBSCO Host,
- Proquest,
- Refworks,
- SAGE, and
- Science Direct.

Further, a myriad of keywords along my academic endeavor. Focusing exclusively on my most filtered and focused effort, the following themes and subtopics have been helpful and rewarding:

- Innovation + Strategy
- Determinants innovation + Strategy
- Innovation + Learning
- Innovation + Agency Theory
- Innovation + Knowledge Theory
- Organizational Learning + Value + Competitiveness
- Organizational Learning + Loop
- Organizational Learning + 4I
- Organizational Learning + 5I
- Situational Learning Theory + Innovation
- MIS+ TRM + Innovation
- Organizational Learning + Situational learning Theory
- Organizational Learning + Total Quality Management (TQM) Summary

Summary

Using OL learning frameworks as a reference for OLI design, a few challenges are observed. Firstly, OLI are not necessarily those which explicitly use the most cutting-edge technology, or the most current theoretical formulations aimed toward effective organizational learning, although best practices should always be assessed and applied (Crossan, Lane & White, 1999). The challenge of OLI is not only to choose OLI candidates which are most likely to enhance the operation of the organization, but to down-select to those which use resources the most efficiently (Nonaka, Kodama, Hirose & Kohlbacher, 2014). The basics of OL, which is the development, maintenance and enhancement of basic skills and the organization's culture and expectations will always be central to the organization's operation (Senge, 2006). However, careful choice of OLI can also enhance the development of the tacit knowledge, the knowledge and wisdom of the most skilled and which is the most difficult to capture and impart to others in the organization (Jones & McPherson, 2006; Nonaka, 1994). By specifically addressing OLI to these important areas, the organization can maintain and increase its competitiveness and avoid the consequences of spending resources on OL which do not ultimately benefit the organization (Sexton & van Auken, 1985).

Chapter 3: Research Method

The goal of this dissertation sought to address, involved the overlooked connection between innovation and knowledge. Without plentiful research, tools and options to holistically understand the connection between knowledge and innovation, organizational leaders risk underutilizing the learning assets of their firm by investing them in content poorly aligned with the direction confirmed in strategic planning and innovation planning efforts (Ferauge, 2012; Herrera, 2015; Mintzberg, 1994).

Research Methods and Design(s)

Business leaders are challenged to lead their organizations to a sustained advantage. Company leaders strive align strategy with customer demand. To address the challenges of sustaining a competitive advantage and combating the competitive forces that shape the market, business leaders live in a volatile world (Porter 1991; 2008). Case study research mixes observation and research conducted in a real time market or business context and can thus shed light on the phenomena made the subject of research (Stake 2005; Yin, 2003,2014).

Case study research is not quantitative, but qualitative, and as such is usually not relevant for hypothesis testing or statistical analysis (Yin, 2011). However, case study research can provide information to fuel future research, both qualitative and quantitative. Thus, much of the information provided by case study research can be characterized as ground-up and the basis of a grounded theory approach, whose goal is to provide seminal data which can lead to theory (Eisenhart, 1989). Yin defines a case study as an exhaustive examination into a specific phenomenon within a real-world context (2014; Stake, 2005). The case study is useful for discovering, in the context of the specific phenomenon, challenges, issues, complications, procedures, objectives, disadvantages, and other issues relevant to the firm's mission, talent and

operations (Yin, 2014). Since this dissertation was qualitative, the goal was to obtain basic information or observations used to connect OLI and the determinants of innovation, understand the contextual implications of unifying themes observed in the interview response data, and locate records (organizational content, reports) suitable for triangulation of findings. This study utilized a single study method. In research on research methods, single case studies are thought to provide great insights into the ‘how’ and the ‘why’ of the phenomenon (Ridder, 2017).

The methods utilized in this study followed accepted protocol for case study research and our outlined in Appendix C: Interview guides/protocol (Yin, 2003). Topic areas for the OLI case study included: data sources (which included personnel, internal reports, standard training protocol and advancement steps, staff interview, and public information), and the results examined and assembled into this dissertation study report. As in all case studies, there was aspects of the method useful expressly for the particular topic and organization, appropriate for an process with such an idiographic nature (Rothbauer, 2008; Stake, 2005). The idiographic nature of case studies leads to the criticism that, since the data are from a single source, it is difficult to verify findings (Rothbauer, 2008). An answer to this dilemma is triangulation (Rothbauer, 2008; Ridder, 2017). Triangulation is defined as a means of reviewing data from multiple sources to search for trends or regularities in the research data.” (O’Donoghue & Punch, 2003, p.78.). Triangulation utilizes data from different sources (in this case it included interviews, records, reports, observations, documented process, filings, and other content made available by the firm made the subject of this case study) to determine if the findings from the single source, such as the case study, are supported by findings from a different data source (Rothbauer, 2008; Ridder, 2017). The product of a case study should include a comprehensive statement noting the research findings of the study (Stake, 2005). For this dissertation, the results

were specific to the study goal of understanding the constructs of firm-specific determinants of innovation and the manner that stakeholders, armed with awareness of these innovation determinants, informed the OLI selection process and strategic planning.

The advantage of content analysis is that responses from different participants can be compared using the same criteria, and therefore can be generalized to similar participants. The difficulty in content analysis is reliability of the content analysis method, or coding; the criteria for coding into a category must be objective so that different coders will agree. Overall, however, semi-structured interview with objective content analysis is a widely used method in qualitative research as input into grounded theory, and work in tandem with case study data. Schlagwein & Bjorn-Andersen (2014) use content analysis to categorize and interpret the data from both the interview and case study components in their study.

Utilizing content analysis methods, a case study can result the identification of patterns and relationships, creating, extending, or testing a theory (Ridder, 2017). In this study, content analysis methods and criteria were utilized for the case study and interview components in exploring OLI. The strategy utilized in the analysis of qualitative data are principally related to the study generation of taxonomy, themes, and theory (Bradley, Curry & Devers, 2007). Taxonomy is defined as a systematic approach to formally classifying multi-dimensional phenomena (Bradley, Curry & Devers, 2007). Bradley, et al, further define themes as reoccurring perceptions that unify concepts and theory as an established general, flexible proposition that interpret actions or phenomena made the subject of inquiry (2007). In this case study, the use of a taxonomy was unnecessary given the lack of complexity in the data collected. However, the content analysis approach did yield an analysis that included the observation of five key themes that unified the manner in which direct and contextual observations were

understood and translated. Theory was also a consideration for this study, as the findings included an elaboration of theory after considering the manner in which OLI was selected and utilized in the case study made the subject of this dissertation.

In particular, the case study methodology will be modeled on that used in Schlagwein & Bjorn-Andersen (2014) in their case study of crowdsourcing at LEGO as an input to organizational learning. The authors use (pp. 758-760) the Crossan 4I structure as a template for analyzing OL at LEGO, with an emphasis on crowdsourcing as a potentially important input into the Intuiting phase of determining the content of organizational learning. Since the goal of this study is to determine the procedure, components, participants and implications of OLI, and also to include new areas of investigation such as crowdsourcing, using the procedure of the Schlagwein & Bjorn-Andersen (2014) case study as the model is particularly applicable. Schlagwein & Bjorn-Andersen (2014) use standard case study methodology. The researchers spoke to stakeholders, attended meetings and toured facilities to obtain an overall understanding of the company. They examined both internal documents and public information sources, including press releases, conference presentations and social media. In addition, the conducted semi-structured interviews with nineteen participants and informal discussions with twenty-five other internal and external stakeholders. In contrast, this qualitative, single case study conducted sixteen semi-structured interviews with participants and informal discussions with twelve other external stakeholders, as well as conducted extensive review of records, documents and observations of process.

Creating the case study interview.

Since this dissertation was qualitative rather than quantitative, the goal was to provide basic information which would serve as an initial characterization of OLI. As such, the research

questions are not intended to be the basis for statistical analysis and hypothesis testing, but rather to cover basic areas of OLI in the organization. The research questions were the impetus for the direction of the data collected during the study.

Field Test

Before finalizing the instrument interview that led to list of interview questions selected and included in the case study, research was conducted within two rounds of field testing. The field testing included the participation of three SMEs in the software-services industry. The field test included a review of sixty-five questions intended for the case study participants. After review and discussion, the list was modified to be judicious, simple to understand, and free from any questions that might elicit irrelevant data.

Interview Questions

As such, the research questions are not intended to be the basis for statistical analysis and hypothesis testing, but rather to cover basic areas of OLI in the organization, which enabled an understanding of the “how and why” OLI and OL relate (Yin, 20014; Ridder, 2017). This study utilized a semi-structured interview to elicit information about OLI in organizations. The interview questions evolved from these primary research questions:

RQ1. How does the firm’s leadership implement the processes of discovery and selection of components and content the organization deems essential for ongoing learning initiatives?

RQ2. What type of information, from what different sources, informs the stakeholders of the deterrents of innovation?

RQ3. How does the firm’s leadership translate strategic planning and innovation into a strategic advantage?

Examples of questions utilized in interview instrument included:

Organizational structure & decision making.

1. How would you describe the organizational structure responsible for training in your organization?
2. Can you identify the participants, by title, responsible for selecting the curriculum for training options in your organization?
3. Who, or what department, within your firm is responsible for implementing training
4. Who, or what department, within your firm is responsible for the decision on what training inputs are chosen and implemented?
5. Who, or what department, within your firm is responsible for is responsible the evaluation of training as it is introduced to the organization?

Value of training.

6. On a scale of 1 to 5, 1 being the most strategic, how strategic do you think training is within your organization?
7. On a scale of 1 to 5, 1 being the most correlated, how strongly correlated do you think your success is to the training your employer provides to you?
8. On a scale of 1 to 5, 1 being the exceptionally critical, how critical is training to the future success of your company?
9. To what degree do you believe you learn key skills from the training you receive from
10. Do you feel you are more productive in your role and responsibilities as a result of the training your employer makes available to you?
11. Without access to any training, would you be successful in your role?
12. To what degree do you believe tacit, or informal knowledge informs the content options for current or future training in your firm?

13. To what degree do you believe tacit, or informal knowledge informs the overall success of training in your firm?
14. To what degree do you believe explicit, or formal knowledge informs the content options for current or future training in your firm?
15. To what degree do you believe explicit or formal knowledge informs the overall success of organizational learning and training in your firm?
16. Which would you rate as more impactful streams of knowledge, tacit or formal?
17. To what degree do you believe your firm utilizes social media to inform the content options for current or future training?
18. To what degree do you believe your firm utilizes social media to inform the overall success of training?
19. What is the basis for evaluation of alternative topics?
20. Are you asked to evaluate the effectiveness of training once it is complete?
21. To what degree do you think the training your employer provides is directly related to your productivity.
22. Do you believe you would be more, less, or equally productive if your employer stopped providing any type or level of training?
23. How many different categories of training does your employer offer? (example, HR/onboarding, technical training, systems, compliance/legal, strategy)

Selecting the inputs or curriculum for training.

24. What process does the firm use to search for the best content options for current or future training?

25. What process does the firm use to validate or scrutinize the best content options for current or future training?
26. Is the selection of training inputs related to the CEO's vision and strategy for the company?
27. Is the total cost of training a barrier to selecting the best inputs of training for your
28. Are you able to attend training provided or facilitated by third parties? If yes, do you find training in a third-party environment to be more valuable?
29. If you are able to attend training provided or facilitated by third parties, is the training aligned with the training curriculum your company utilizes for your department?

Implementation & compliance.

30. Is training a mandatory requirement for you in your role with your employer?
31. How many days a year do you estimate you spend on training activities?
32. How does your employer use customer or market data to inform the selection of your training program?

Budgeting and metrics for financial analysis.

33. What is the process for budgeting and approving training resources?
34. Is there a financial metric used by your employer to evaluate the return or financial impact of training to the organization?
35. Is training related in any way to the company's commitment to innovation? If yes, to what degree is the value from innovation included or referenced in the understanding of value of training?
36. What type of information from what different sources informs the stakeholders of the deterrents of innovation?

37. Is there a financial metric used by your employer to evaluate the return or financial impact of innovation to the organization?

Demographics.

38. Male/Female

39. Current title?

40. Highest degree obtained?

41. In the past ten years, which titles have you held? (team leader, manager, director, vice president, officer, or trustee)

42. Country where the majority of your business experience has taken place

Demographic analysis

Since the proposed participants for interview were a small convenience sample, it is likely that there will be little demographic variance. Although this study made an effort to include representatives of demographic groups, it is very likely that the findings of the study will have little demographic generalizability, although many studies (Arif, Egbu, Malik, & Khalafan, 2009; Arif, Mohammed & Gupta, 2015; Nonaka, 1991; Song, & Chernack, 2015) have shown that ethnic background, company culture and sex influence responses to questionnaires and to interviews. Previous research (Arif, Mohammed & Gupta, 2015; Arif, Egbu, Malik, & Khalafan, 2009; Chugh, 2015; Nonaka, 1991; Song, & Chernack, 2008) suggested that there are ethnic, country of origin and sex differences, and other demographic differences in the findings in OL and knowledge research. For this dissertation, demographic data would more completely characterize and explain the results of the research question data, especially in the analysis of the interview results. The collection of demographic data followed all ethical guidelines to ensure anonymity of the participants.

Participants' demographics

It is standard practice to collect demographic data on participants, both to characterize the sample and to provide insight on how why participants respond differently to interview questions. The following data will be collected from interview participants.

- Industry/Organization
- Country of origin
- Country where the majority of your business experience has taken place

Additional demographic areas will be assessed.

Population

While a statistical analysis in research often requires random and independent selection of subjects, Stake asserts that nonrandom sampling is typical of case studies, provided since the goal of the sample is not to represent a larger population (2005). Stake goes further to state, in contrast to quantitative logic, a case selection comes from interest or theoretical motives (Ridder, 2017; Stake, 2005). Motivated by the ability to use these tools to understand opportunities to fill a gap in theory or build toward theory development, a high growth industry matched to a case study subject ripe with contextual and relevant details to fulfill the purposes and sub-purpose of the research proposed.

Fitting the criteria for population candidates, one company was selected. An organization from the software service industry with revenue with less than \$100 million in total sales served as the subject of the case study portion of this dissertation's data collection. The company requested anonymity for purposes of protecting trade secrets and competitive data that they may have shared during the course of interviews and record sharing. To provide the promised confidentiality, the organization is known in this study as ABC Service Company. ABC Service

Company has the characteristics which make it amenable to study on OLI, in particular a commercial focus which requires ongoing inputs to OL owing to the rapid change of technology and the scale of the customer base. Service based organizations face a complex utilization intra-organizational structures to need for coordination of internal resources throughout the firm (Barrett, Davidson, Prabhu & Vargo, 2015). In addition, an organization in this industry and of this size has a symbiotic relationship between knowledge and innovation (Barrett, Davidson, Prabhu & Vargo, 2015). Therefore, the formal and informal training program implemented by ABC Service Company to ensure that its employees are current in their skills and capable of delivering subject matter expertise ahead of the market's ability to address demand for those expertise provided critical insight and observations to the study goal, which was to focus on the critical importance of the inputs to OL and to further examine the construct of firm-specific determinants of innovation and the manner that stakeholders, armed with awareness of these innovation determinants, inform the OLI selection process and strategic planning.

Sample

A single case study will serve as the subject of the case study portion of this dissertation's data collection. Service innovation is different from product and tradition innovation (Barrett, Davidson, Prabhu & Vargo, 2015), thus a study specific to service-based company data was particularly interesting to researchers and the phenomena of OLI.

To select the best sample to be part of a convenience sample, a review of available and interested stakeholders were reviewed before the convenience sample candidates were selected. ABC Service Company's stakeholders possess the characteristics which make it amenable to study on OLI, in particular a commercial focus which requires ongoing inputs to OL owing to the rapid change of technology and the evolution of the customer base. To address innovation

and increase competitiveness, it was the view of ABC Service Company leadership that they must ensure employees were current in their skills and capable of delivering subject matter expertise ahead of the market's ability to address demand for those expertise. Since the responsibility for strategy planning and innovation planning often fall to the executive and senior leadership team (Gómez, Salazar & Vargas, 2016), the leadership team became the appropriate sample for this study. ABC Services Group has two classes of employees, those that are billable to clients and those that are in support or executive roles (non-billable). The sample, comprised of sixteen employees or past employees, served in leadership functions. The sample was split equally between leaders in managerial, non-C level roles, and those in executive CxO positions (specifically the CEO, CFO, CIO, and executive board members). The determination to exclusively use managers and executives in the case study originated from the need to connect organizational matters across the enterprise, something employees without leadership responsibilities would have enough knowledge of the enterprise to provide reliable information and observation.

Materials/Instruments

Materials and instruments for the case study will include interviews, observation of the operation of the business, and written material, with the goal of obtaining a comprehensive picture of ABC Service Company. Following the protocol set forth for the case study (Appendix C: Interview guides/protocol), research activities included: semi-structured interviews were conducted with sixteen stakeholders (internal and external), attended meetings and tour facilities to obtain an overall understanding of the company, examined both internal documents and public information sources, including press releases, conference presentations and social media. Finally, to include tools for triangulation with the semi-structured interviews, informal interviews were

conducted with twelve organization stakeholders (internal and external) that were identified from observation and published materials as sources of information to complete the picture of the company's operation and approach to OL development.

Data Collection, Processing and Analysis

This study will address the components and process for the generation and development of OLI. Grounded theory (Gay & Weaver, 2011), implicitly criticizes the hypothetical-deductive approach in that a top down theory cannot have applicability without an initial thorough understanding, description and definition of the real-world phenomena the theory attempts to explain (Gelso, 2006). By accurately understanding what is occurring in a particular, constrained situation, including the actors' impact, inductive-synthesis develops theory very close to the data. Inductive-synthesis often uses case study and interview as a research method, believing that a detailed analysis of an idiosyncratic event can lead to richer understanding (Cozby, 2009; Gay & Weaver, 2011).

The strategy utilized in the analysis of qualitative data are principally related to the study generation of taxonomy, themes, and theory (Bradley, Curry & Devers, 2007). In this case study, the use of a taxonomy was unnecessary given the lack of complexity in the data collected. However, the content analysis approach did yield an analysis that included the observation of five key themes that unified the manner in which direct and contextual observations were understood and translated. Criterion utilized to connect the data collected to themes included: training, continuing education, performance management tools, budget and planning. Theory was also a consideration for this study, as the findings included an elaboration of theory after considering the manner in which OLI was selected and utilized in the case study made the subject of this dissertation. The data and the product of the research was modeled after that done

in the case study performed by Schlagwein & Bjorn-Andersen (2014), since it addresses the OL issues relevant to this study, and also describes how crowdsourcing is an important input to the company's design, operation and capability to meet strategic goals.

Assumptions

Assumptions are critical observations made by the researcher regarding the methods used in the process of qualitative research (Creswell, 2008). In this study, assumptions included the expectation that the organization would provide ample access to enough data and personnel that the case study protocol would be followed and the research study unconstrained. Additionally, it was assumed that the respondents would provide honest responses, as Yin reported not all case study data is reliable when deception of the participants is included in the response data (Yin, 2014). Lastly, it was assumed that all guidelines for integrity, trustworthiness, confidentiality, and the requirements bestowed upon the researcher by NCU's IRB process would be strictly respected and followed.

Limitations

Limitations in the study were limited to those inherent in case study and small sample interview (Yin, 2014). As a single event, it is unknown how much generalization can be determined from the case study, since there is no replication of the procedure, and indeed as an idiosyncratic event any replication would be suspect. This limitation, however, does not indicate that the results of the case study were not valuable, since the goal of the case study, in addition to providing a comprehensive description of an exemplar, is to suggest areas for further examination.

While the implications from this research include an elaboration of the 4I and 5I theory that filled a gap, the implications include the forward-looking opportunity for both practitioners

and future research, measuring or validating generalizability would provide context to the results from this study. Yin recognized limitations in case study research that included truthfulness of interview responses and generalizability (Yin, 2009). The case study method introduces a “lived reality” of the participants, and thus can provide results with idiosyncratic constructs or perceptions not shared beyond the realm of the case study environment (Hodkinson & Hodkinson, 2001: 3).

Delimitations

Since this is case study and a small sample interview research, there are no critical delimitations outside of sample size, population, and content analysis. The small number of participant within a single case study may not provide a collective shared experience

Ethical Assurances

This study will undertake the required procedure before the conduct of the study and data collection begins. An application will be submitted to the IRB for approval. The final study design will be in strict accordance with the approved application. All ethical guidelines will be followed to protect the participants in the study. Participants will be informed on the purpose of the study and the use of the data collected. A consent form describing their rights while participating in the study will be provided, including that their participation is voluntary, and that their participation is anonymous. The procedure for assuring security of the data will be described, and participants will be informed that they are free to stop their participation at any time. Only those who sign the informed consent form will be permitted to participate.

IRB related documents included in this proposal appendix

- Appendix A: Interview Instrument
- Appendix B: Informed Consent Case Study

- Appendix C: Interview guides/protocol
- Appendix D: CITI Training Certificates
- Appendix E: Demographic questionnaires

Summary

Using a qualitative, grounded theory approach with a single case study and interview, this examined the critical importance of the inputs to OL and to further examine the construct of firm-specific determinants of innovation and the manner that stakeholders, armed with awareness of these innovation determinants, inform the OLI selection process and strategic planning, since these are the basis for the future success of the organization. The analysis included a focus on triangulation between informal interviews and semi-structured interviews. The results of the analysis provided an initial description of the most significant components and process utilized to determine OLI. Moreover, results supported an elaboration of 4I and 5I OL frameworks. Themes observed that inform and unified the OLI process included strategy, innovation, productivity, compliance, and tacit knowledge v. explicit knowledge.

Chapter 4: Findings

Overview of Study

The primary purpose of this qualitative, single case study was to determine vital components of a model for OLI, which is the selection of content of what the organization deems essential for ongoing learning initiatives and is an imperative of strategic planning and innovation (Baltar, 2013). Strategic planning and innovation are staples of strategic/competitive advantage, fueled by the ability of an organization's stakeholders to anticipate customer needs, demand, and preferences (Bose & Ye, 2013; Kitapçı & Cömez, 2016). Strategic advantage, characterized by maximum revenue attainment given the implementation of the best strategy to match customer demand and market conditions (Kaplan & Norton, 1996; Porter, 1991).

Case study research is an effective scientific approach when investigating management and business-related phenomena within the natural management setting, as it complements the inductive-synthesis approach employed to both develop and elaborate theory (Yin, 2003,2014; Ridder, 2017). Following the Eisenhardt example, the case study design assumed gaps and theoretical connections to existing literature, without a predetermined perspective or hypotheses that would limit an opportunity to observe emergent relationships of constructs or concepts (1989; Ridder, 2017).

The case study design was inclusive of interview questions, an exhaustive review of documents and records, and observations designed to detect any phenomena associated with the relationship between OL curriculum and market outcomes, or any correlation among a focused base of OLI and increased productivity, incremental attainment of success, or competitive advantage. To capture all emergent themes and understanding of concepts, the interview

questions provided ample opportunity for respondents to address any other phenomena they deemed as relevant determinants of OLI or results of OL that might provide a reasonable contribution to future theory development, including but not limited to total quality management (TQM), tacit and explicit knowledge, social or collaboration media, and existing management theories.

The secondary purpose of this qualitative study included an examination of the construct of firm-specific determinants of innovation and the manner that stakeholders, armed with an awareness of these innovation determinants, inform the OLI selection process and strategic planning, the basis for the future success of the organization (Baltar, 2013; Porter, 1991).

Research Questions

Built on the foundation of key research questions, the research design included a semi-structured interview to elicit information about OLI in organizations and the market or performance outcomes they breed. Of the numerous options for tools and instruments to collect data during a case study, Yin identifies interviews as the most significant form of data collection (Yin, 2014). Three questions embedded into the research design created the framework for the instruments utilized in this single case study. The three primary research questions extend components within OL known from existing scholarly literature and blend in any detectable relationships and correlations to strategic planning, determinants of innovation, and market or performance-based outcomes.

Key research questions for instrument building.

RQ1. How does the firm's leadership implement the processes of discovery and selection of components and content the organization deems essential for ongoing learning initiatives?

RQ2. What type of information, from what different sources, informs the stakeholders of the deterrents of innovation?

RQ3. How does the firm's leadership translate strategic planning and innovation into a strategic advantage?

The instrument developed (Appendix A) was utilized with all sixteen respondents that participated in the case study activities.

Case Study Subject and Sample

Management and business problems exist in a complex, real- life environment. Company leaders are constantly striving to align their strategy and strategic implementations to match and serve market and customer demand; as a result, the environment often experiences change, uncertainty, and mid-course corrections to keep projects and initiatives productive. Case study research, which allows for observation and research conducted in the natural management environment, can contribute to understanding the how and the why of phenomena made the subject of research (Stake 2005; Yin, 2003, 2014).

While a statistical analysis in research often requires random and independent selection of subjects, Stake asserts that nonrandom sampling is typical of case studies, provided since the goal of the sample is not to represent a larger population (2005). Stake goes further to state, in contrast to quantitative logic, a case selection comes from interest or theoretical motives (Ridder, 2017; Stake, 2005). Motivated by the ability to use these tools to understand opportunities to fill a gap in theory or build toward theory development, a high growth industry matched to a case

study subject ripe with contextual and relevant details to fulfill the purposes and sub-purpose of the research proposed.

The case study was conducted utilizing a US-based services firm, specializing in business consulting and software services. A service-based firm delivering software-related services and advisory must consider the implications of innovation and stay ahead of the technology curve if they are to serve the general market with technology-related expertise. The dependencies of the service business model served as a uniquely suited candidate for a case study designed to study the impact of OLI, innovation determinants, and resulting market outcomes. The company, identified herein as ABC Service Group (confidentiality requires the use of a pseudonym for company name and code name for interview participants) provided cooperative, open, and enthusiastic participants. The leadership within ABC Service Company granted full access to conduct initial interviews, review documents and records, access to interview participants for follow up or secondary questions, and full access to current and previous top management team members, including the CEO and CIO

About ABC Service Group.

ABC Services Group, a fast-growing, US-based services firm, focused on providing SAP related consulting services, advisory services, and talent augmentation based in Denver, CO. ABC Services Group launched in 2009. In fiscal year 2017, ABC Services Group estimated their revenues would exceed their target of \$50,000,000.00 in consulting revenues and \$4,500,000 in Earnings Before Interest, Tax, Depreciation, and Amortization (EBITDA) on a base of 225 employees. The organization gained recognition by numerous publications for their growth and innovative approach to the SAP services market. Specifically, ABC Services Group has gained

accolades as “Fastest growing company” by Denver Business Journal. ABC Services Group’s revenues have grown sharply year over year since 2011. ABC Services Group has a strong growth trajectory fueled the firm’s commitment to innovation and investment in disruptive technologies used by Fortune 1000 companies running SAP software.

The company SAP is a global leader in enterprise applications that is part of the Fortune Global 500 list. The Fortune Global 500 list of companies generated over \$1.6 trillion dollars in profits. From a market perspective, SAP competes with Oracle and Microsoft for market saturation. While SAP characterizes their software architecture as open, the software core is proprietary; thus, customers and partners in the SAP ecosystem must continually commit to SAP training and education to continue to implement new SAP services and maintain existing SAP installations. In 2016, SAP reported €22,000,000,000 euros in revenues and €5,000,000,000 in profitability. SAP’s ecosystem of partners providing consulting services to SAP clients is reportedly over 10,000 number of partner firms, of which ABC Services Group is one.

SAP software has introduced numerous new products to the marketplace since 2009. To be prepared to serve clients adopting new and disruptive SAP technologies. In 2011, ABC Services Group leadership adopted an enhanced set of best practices designed to keep employees trained and educated on market trends, new and changing SAP technologies, relevant enterprise application technologies, and proprietary ABC Services Group methodologies. Further, ABC Services Group adopted a practice to incorporate internal data, market data, and social media to enhance organizational learning. The enhancements to ABC Services Group’s OL practices were primarily introduced to support ABC Services Group’s innovation program. The secondary motivation was to improve profitability. Essentially, the ABC Services Group’s executive team predicated their vision for growth on an aggressive innovation cycle designed to deliver

innovated intellectual property and services to the SAP market ahead of most of SAP's product launches. ABC Services Group architected a strategy to increase margins on billable consulting by getting experts in the market during the earliest stages of SAP's product launches when resources capable of implementing and customizing these new solutions are most scarce and thus in high demand.

To properly execute ABC Services Group's strategy plan, ABC Services Group had to perfect the ability to deliver innovation in a shorter innovation cycle than their competitors. To achieve this goal, ABC Services Group would optimize their organization learning program and align it with the innovation planning for the firm. The CIO believed connecting knowledge and training to the innovation roadmap would generate short and long term value.

Sample

ABC Services Group has two classes of employees, those that are billable to clients and those that are in support or executive roles (non-billable). The sample, comprised of sixteen employees or past employees, served in leadership functions. The sample was split equally between leaders in managerial, non-C level roles, and those in executive CxO positions (specifically the CEO, CFO, CIO, and executive board members). The determination to exclusively use managers and executives in the case study originated from the need to connect organizational matters across the enterprise, something employees without leadership responsibilities would have enough knowledge of the enterprise to provide reliable information and observation.

Out of the total population, fifty-six percent had roles that had a billable classification.

Demographic analysis

It is standard practice to collect demographic data on participants, both to characterize the sample and to provide insight on how why participants respond differently to interview questions, thus the interview instrument included questions regarding demographic data on all interview participants from ABC Service Company.

- Gender
- Classification or current professional title
- Highest academic degree obtained
- Country where the majority of your business experience has taken place

Previous research (Arif, Mohammed & Gupta, 2015; Arif, Egbu, Malik, & Khalafan, 2009; Chugh, 2015; Leufven, M.; Nonaka, 1991; Song & Chernack, 2008) suggested that there are ethnic, country of origin and sex differences, and other demographic differences in the findings in OL and knowledge research. For this dissertation, demographic data will be used to more completely characterize and explain the results of the research question data, especially in the analysis of the interview results. However, the collection of demographic data will follow all ethical guidelines to ensure anonymity of the participants.

Table 1 *Demographic Data for ABC Service Company Respondents*

Respondent	Gender	Degree	Classification	Country
A1D	Male	BS	Exec/NC	USA
A2E	Male	BS	CxO	USA
A3E	Male	MBA	CxO	USA

A4D	Female	BS	Exec/NC	USA
A5D	Male	BS	Exec/NC	USA
A6D	Female	Masters	Exec/NC	USA
A7D	Male	Masters	Exec/NC	USA
A8E	Male	HS	CxO	USA
A9D	Male	BS	Exec/NC	USA
A10D	Male	BS	Exec/NC	USA
A11D	Male	BS	Exec/NC	USA
A12E	Male	Masters	CxO	USA
A13E	Male	BS	CxO	USA
A14E	Male	BS	CxO	USA
A15E	Female	BS	CxO	USA
A16E	Female	MBA	CxO	USA

Results

Recalling that the study was designed with roots in social constructivism, it is important to remember that the observations and interviews occurred searching more for patterns and constructed, or perceived reality, rather than exact and specific facts that would transfer from one company environment to another, as learning is an inherently constructivist activity (Ridder, 2017). To that end, sixteen interviews were conducted over a two-month period in 2017 with members (past and present) of the ABC Services Company, each one lasting an average of one and one-half hours. Each employee interviewed had an introduction call to review the purpose of the study, review eligibility requirements, discuss and execute an informed consent

agreement, and set expectations for the interview process. While not an absolute requirement, the preference in the research design was to conduct the interview in person or via a digital/video connection. In eight out of sixteen of interviews, a video or face to face environment existed. The eight employees interviewed via telephone were regularly traveling to support clients. The accommodation was made to ensure minimal disruption to the company and employee activities. During the interviews, numerous observations and excessively detailed notes were created, often capturing key statements verbatim.

To maintain a consistent approach to collecting responses in the sixteen interviews, the interview instrument (Appendix A) guided the process to gather baseline information. In each interview, the respondent would add details, sometimes offer details supported by documents and records, and expand beyond the initial scope of the four-two prepared questions. The notes included a mixture of shorthand and English. Following each interview, a formal review of the interview notes and made any corrections necessary to ensure integrity of the coding process to follow. After the review of the notes, the notes were transcribed into a digital file format in Microsoft Word and which was protected by password. Moreover, the computer the files were stored utilized encrypted data programs to increase security of data saved locally, as well as password protection to preclude intrusion into the computer. retained copies of the original notes which, per protocol, remained stored in a secured file cabinet safeguarded by a key lock, accessible only to the primary researcher. Yin posits that there are three principles of data collection; use of multiple sources of observation and evidence to support triangulation and increase reliability and validity, produce a case study databank and maintain chain of evidence (Yin, 2003). The protocol followed during this case study is compliant with Yin's three principles.

Considering the many theoretical considerations, methods, and designs known to researchers, utilizing any standard means of qualitative review of data is sub-optimal, as there does not seem to be a one size fits all approach to analysis (Bradley, Curry & Devers, 2007). Despite the diversity in options, many experts consider the analytical strategies that produce taxonomy, themes, and theory to be productive (Bradley, Curry & Devers, 2007; Ridder, 2017; Yin, 2014). In this particular case, the complexity necessary to support the use of taxonomies did not appear present; however, the effort to identify unifying themes and utilize theory to understand linkage proved to be critical in interpreting the findings.

Themes are concepts that continue to appear in the qualitative data, in this particular case, most often from the interview data (Bradley, Curry & Devers, 2007; Ridder, 2017). As the research process progressed into the analysis phase, two key themes and four secondary themes began to emerge and become clear, which allowed for the analytical methods Yin indicated an important part of an analytic strategy, such as pattern matching (2003). The key themes that developed supporting the primary study purpose, and critical in theory development include the following:

- Theme One: Strategy/strategic planning and intent
- Theme Two: Innovation

In addition to the key themes that emerged to unify concepts associated with the primary study questions, unifying concepts associated with the sub purpose of this qualitative study began to emerge. The supporting themes that developed and unified the concepts addressed in the study include the following:

- Theme Three: Productivity
- Theme Four: Compliance

- Theme Five: Tacit knowledge v. Explicit knowledge

Along with themes, theory was critical to interpreting the linkage and relationships in the data. Theory generates recognition and understanding of linkage, confounding variables, and contextual details associated with the phenomenon and provide a connection to extant literature and basis for connection to future research (Bradley, Curry & Devers, 2007). Social constructivists see the world and the theoretical basis for knowledge gained through interactions, language, context, and culture (Lave & Wenger, 1991). Some experts have furthered via extant literature that grounded theory and constructivism, both critical theoretical constructs in this study, share a linkage. Those experts argue research with a grounded theory base must address the constructed aspects of the data while considering the constructed realities of the participants and what those findings can offer to an eventual theory (Mills, Bonner & Francis, 2006). In this case, each respondent provided a response to stimuli enveloped in their own constructed view of knowledge sharing, culture, performance, and success. Often the theoretical linkage brought the responses that, without the constructivist perspective may have seemed unrelated.

Relevant research questions and key themes

The key themes that developed from the interview responses and data include the following:

- Theme One: Strategy/strategic planning and intent
- Theme Two: Innovation

Q1. How would you describe the organizational structure responsible for training in your organization?

Table 2 Key Themes in Interview Question One

Themes	Top Management Team (CxO) (n=8)	Managers (n=8)	Percent for theme (n=16)
Strategy	8	4	75%

Q6. On a scale of 1 to 5, 1 being the most strategic, how strategic do you think training is within your organization?

Table 3 *Key Themes in Interview Question Six*

Themes	Top Management Team (CxO) (n=8)	Managers (n=8)	Mean for theme (n=16)
Strategy	mean 1.87	Mean 2.37	Mean 2.12

Q24. What process does the firm use to search for the best content options for current or future training?

Table 4 *Key Themes in Interview Question Twenty-Four*

Themes	Top Management Team (CxO) (n=8)	Managers (n=8)	Percent for theme (n=16)
Strategy	7	3	63%
Innovation	7	6	81%

Q25. What process does the firm use to validate or scrutinize the best content options for current or future training?

Table 5 *Key Themes in Interview Question Twenty-Five*

Themes	Top Management Team (CxO) (n=8)	Managers (n=8)	Percent for theme (n=16)
Strategy	8	5	81%
Innovation	8	6	88%

Q26. Is the selection of training inputs related to the CEO's vision and strategy for the company?

Table 6 *Key Themes in Interview Question Twenty-Five*

Themes	Top Management Team (CxO) (n=8)	Managers (n=8)	Percent for theme (n=16)
Strategy	8	6	88%
Innovation	8	6	88%

Q33. What is the process for budgeting and approving training resources?

Table 7 *Key Themes in Interview Question Thirty-Three*

Themes	Top Management Team (CxO) (n=8)	Managers (n=8)	Percent for theme (n=16)
Strategy	8	5	81%

Q34. Is there a financial metric used by your employer to evaluate the return or financial impact of training to the organization?

Table 8 *Key Themes in Interview Question Thirty-Four*

Themes	Top Management Team (CxO) (n=8)	Managers (n=8)	Percent for theme (n=16)
Strategy	7	1	50%

Q35. Is training related in any way to the company's commitment to innovation? If yes, to what degree is the value from innovation included or referenced in the understanding of value of training?

Table 9 *Key Themes in Interview Question Thirty-Five*

Themes	Top Management Team (CxO) (n=8)	Managers (n=8)	Percent for theme (n=16)
Innovation	8	6	88%

Q36. What type of information from what different sources informs the stakeholders of the deterrents of innovation?

Table 10 *Key Themes in Interview Question Thirty-Six*

Themes	Top Management Team (CxO) (n=8)	Managers (n=8)	Percent for theme (n=16)
Innovation	8	6	88%

Q37. Is there a financial metric used by your employer to evaluate the return or financial impact of innovation to the organization?

Table 11 *Key Themes in Interview Question Thirty-Seven*

Themes	Top Management Team (CxO) (n=8)	Managers (n=8)	Percent for theme (n=16)
Innovation	8	1	56%

Evaluation of Findings

Theme One: Strategy.

Although there is much research on OL (Crossan *et al.*, 1999, 2003, 2010, Jenkin, 2013), there is a gap on the process and determination what new OL initiatives will support the selection of content the organization deems essential for ongoing learning initiatives. Porter and other scholars connect learning and quality initiatives to a firm's strategic plans, and as a result, the firm's competitiveness (Baltar, 2013; Porter, 1991; 2008). In order to drive a base of decisions that align the strategic interests of the firm's leadership, the decisions must be made or informed by the leadership team.

To be competitive in the software service industry, ABC Services Company CEO and CIO share decision making for the strategic planning associated with market planning and customer acquisition. Since the services ABC Service Company sells to the market is comprised of technology subject matter expertise relevant to the typical SAP customers, ABC Service Company consultants must be abreast and competent with all current versions of SAP software supported by SAP, as well, they must be familiar with the integration nuisances of popular programs likely found in a customer's technology environment that would be impacted by any servicing or upgrade of the SAP system. For example, ABC Service Company provided delivery records during the case study that indicated their consultants interacted with more than fifty-six

non SAP technologies in pursuit of completing SAP specific tasks (examples of those systems include but are not limited to client customer databases, financial reporting systems, warehouse management systems, supply chain management systems, marketing automation tools, content management systems, and engineering programs) and project deliverables. Thus, ABC Service Company had to understand the feasibility, sensitivities, integration, and escalation issues for those ancillary technology investments belonging to their clients. Consider this from the CEO and CIO's vantage point when strategically planning to sell and deliver their services. Such a need for knowledgeable consulting staff would leave ABC Service Company to hire consultants in a just-in-time fashion that already possess the most current knowledge available about SAP and related SAP products or maintain a team of capable technologists and train them on new releases and new technologies as they are deemed relevant to ABC Service Company's service offering. Clearly the just-in-time hiring strategy would erode margins, as they would be hiring the most desirable, scarce, and thus expensive consultants in the available talent pool; moreover, they gamble on the market for delivery capacity and risk not being able to properly staff the projects that their clients hire them to perform. As you might imagine, ABC Service Company prefers the more certain and profitable option which requires them to understand the current technology needs of their customer and prospect base and build an OLI base that aligns with those educational needs. This process and the focus on strategically connecting learning to the business (evidenced in tables 2, 3, 4, and 5).

The CEO indicated that if the leadership team failed to make the alignment between the services they must deliver to clients and their OL program, they would fail in their goals and lose ground in the marketplace. The challenge to accomplish this goal is ambitious, as only 88% of the respondents agreed that their OL aligned with the CEO's strategy (evidenced in table 6).

Interestingly, 100% of respondents indicated that they did not believe that cost was a barrier to providing the best and appropriate training inputs and options. Moreover, many respondents with budgeting authority indicated that they do not often spend the full amount of budget they have in a given fiscal year, despite the fact they know they must stay ahead of the technology learning curve. The CEO indicated that a sign of maturity in their OLI endeavor would include a full use of all expense dollars targeted for training, as well as an improvement in the understanding of return on investment for training dollars. Currently, only 50% of ABC Service Company respondents believe there is an identified metric in place to measure the return on education dollars spent (table 8). That fact should likely be taken lightly, as 100% of the executive team was aware of the metric, which is billable utilization. Essentially, the CFO explained her logic with the utilization metric as consumption arguments. She theorized that only highly trained consultants would be in demand, and thus their billable utilization would be high. Conversely, she assumed if a consultant's utilization was low, they must be lacking knowledge that was needed for selection of consulting opportunities.

Theme Two: Innovation.

Strategic planning and innovation are critical components of strategic and competitive advantage, each driven by the ability of an organization's stakeholders to anticipate customer needs, demand, and preferences (Bose & Ye, 2013; Kitapçı & Cömez, 2016). While much of the information in this case study associated with the strategy theme addressed real-time issues for the ABC Services Company, the theme of innovation was the transition from thinking about today to planning for tomorrow and establishing a roadmap to future relevancy with clients and prospects. An organization cannot be competitive, sustainable and meet its mission unless it continually adapts, innovates, and changes (Porter, 1991), and thus the ABC Services Company

CIO is constantly assessing where the SAP technology roadmap will go in the future and aligning the appropriate technology requirements for his company necessary to keep pace with understanding new SAP products. It was clear from all sixteen interviews that the CIO was the thought leader responsible for setting the technology direction of the company. The responses included a diverse appreciation for what and why when it came to questions that had a thread of the innovation theme, but there was a clear magnetic north to the CIO for innovation planning and guidance. In table 4 and 5 the responses addressed the manner in which the CIO would make quarterly announcements to employees about changes coming from SAP and other software providers and what he envisioned ABC Services Company doing to respond to the imminent knowledge requirement. Interestingly, in table 6, the responses associated with the connection of training to the CEO's strategy scored equally high when it came to innovation. Another interesting response, evidenced in table 9, where respondents have the same percentage of agreement that training is linked to innovation as they did to linkage with strategy (table 6). After more than thirty hours of interviews and observation, it was clear that within the walls of ABC Service Company, strategy was more vision oriented and innovation was more action/implementation oriented. Said differently, to connect these themes to strategy was essentially linking the messaging from the CEO; however, connecting these themes to innovation was linking to actions taken by the CIO, seemingly a heavier burden. The responses associated with understanding the determinants of innovation measured in Table 10. The determinants of innovation included the use of third party analyst reports, economist updates, and confidential information available to certain SAP partners regarding the direction of innovation in SAP and release schedules for future innovations.

Also, interesting, respondents agreed in a slightly higher number that a metric existed for measuring the return of innovation. Ironically, the CFO indicated that she used top line sales and new service line sales in a quarter-over-quarter look to measure innovation, thus not really committing to a logic for innovation in the same fashion as strategy (table 11).

Examining secondary and unifying themes

In addition to the key themes that emerged to unify concepts associated with the primary study questions, unifying concepts and themes associated with the sub purpose of this qualitative study emerged. The supporting themes that developed and unified the concepts addressed in the study include the following:

- Theme Three: Productivity
- Theme Four: Compliance
- Theme Five: Tacit knowledge v. Explicit knowledge

Theme Three: Productivity.

There was a strong awareness expressed in the responses that training made available as a result of ABC Service Company's OLI program had a strong relationship to productivity. Respondents were asked to rate on a scale of 1 to 5, 1 being the most correlated, how strongly correlated do you think your success is to the training your employer provides to you? The average response was 1.6. Productivity, per the leadership team, was a necessary qualifier for OL, and thus OLI. The CFO linked productivity to billable utilization, which was the informal metric used for OL and innovation return on investment. The CFO indicated that without short term productivity, OL and OLI would lack funding.

Theme Four: Compliance.

Compliance, surprisingly, seemed a low priority in the majority of responses associated

with how the organization manages and plans for training. While strategy and innovation are clearly strategic constructs, the implementation of activities that support those key constructs are tactical and delegated to lower levels of management. When asked is training was a mandatory (which the CEO confirmed it is for all employees), 25% of the respondents said “no”, “training is not a required part of my job. Juxtapose that with the fact that 100% of people said they do involve themselves in training every month. The average number of training days annually for the sixteen respondents is thirty days. While the data did not indicate that ABC Service Company suffered loss as a result of low compliance, more than 90% of the sixteen respondents interviewed offered their opinion that increased compliance would benefit the company and they wished to see an increase in compliance in the future.

Theme Five: Tacit knowledge v. Explicit knowledge.

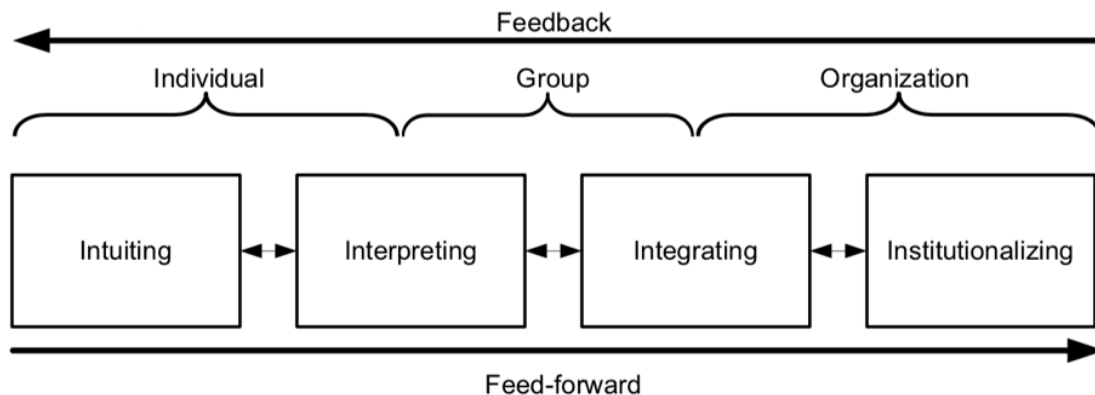
The logic that led to the collection of data and observations regarding tacit knowledge and explicit knowledge stemmed from the connection made by researchers in extant literature between tacit and explicit knowledge types within the framework introduced by Crossan, Lane & White, formally called 4I (1999). The 4I model, characterized by its four stages: Intuiting, Interpreting, Integrating, and Institutionalizing holds a prominent place in OL research. (Crossan, Lane & White, 1999). Intuiting, the first stage characterized by the validation of knowledge, identified types of knowledge; including tacit and explicit knowledge (Crossan, Lane & White, 1999). Malik and Khalafan defined tacit knowledge as experiential and based on insight and wisdom (2009). The elaboration of theory achieved in this study focused on the individual activities of the top leadership team when seeking/collecting information (5I) and the intuiting stage (4I) (Crossan, Lane & White, 1999; Jenkin, 2013).

The questions asked of ABC Service Company employees in the case study interview that addressed tacit or explicit knowledge were included to observe and measure any connection to 4I/5I theory framework. In addition to explanations provided during the case study interviews that identified tacit knowledge as the prevailing knowledge type that ultimately would become part of the inputs of both innovation planning and organizational learning, the respondents also provided data regarding their preference for a tacit channel, which was an unexpected finding in the ABC Service Company case study. ABC Service Company overwhelmingly preferred a tacit knowledge program over an explicit one, indeed only 12% (two people) preferred an explicit knowledge program. The explanations from the fourteen people that preferred the tacit approach centered on the personalization, iterative nature of subject development, tribal manner the team shared education in storytelling, and the access to executive leadership that often initiated the tacit streams of knowledge. This unifying theme was detected in critical areas of knowledge sharing, including: project-based knowledge sharing (operational), methodology-based knowledge sharing (quality management), and knowledge sharing from one generation of workers to another (succession planning).

Elaboration of 4I and 5I OL Learning Models

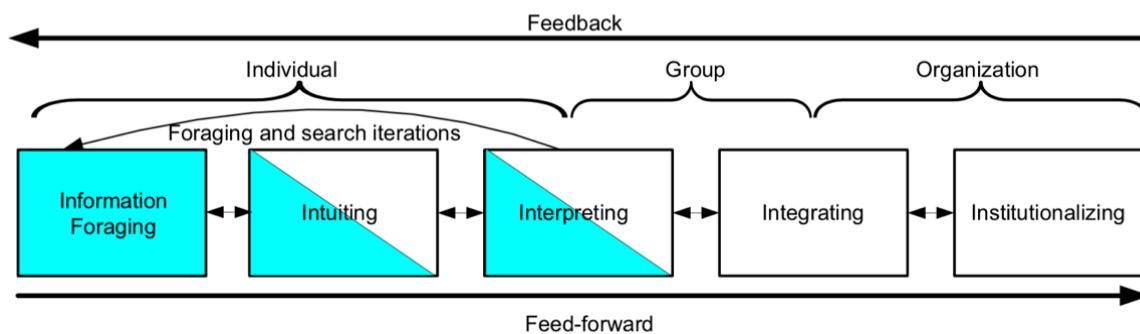
Crossan, Lane & White (1999; 2010) described a multi-dimensional framework for OL, called 4I. The 4I framework included four components: Intuiting, Interpreting, Integrating, and Institutionalizing. The model is dynamic and includes both feed-forward and feedback processes, and covers individual, group and organizational levels (Crossan & Apaydin, 2010).

Figure 5 4I Framework, adapted from Crossan & Apaydin, 2010



As an extension of the 4I framework, Jenkin suggested an additional “I,” Information Foraging, as a technology-enabled source for increasing OL(2013). Jenkin views Information Foraging as a process that feeds Intuiting, and that Information Foraging is an additional “I” in the OL framework (2013).

Figure 6 5I Framework adapted from Jenkin, 2013.

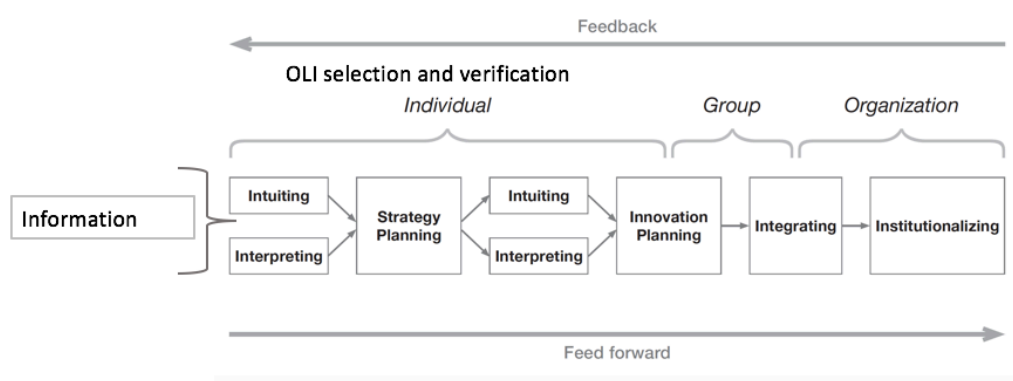


These frameworks are critical ingredients to both knowledge sharing and the creation of an OLI base. ABC Service Company executives provided responses to interview questions, documentations, process diagrams, and documented best practices that developed a map of

activities associated with strategic planning, innovation planning, and the relationship those activities shared with OLI development.

Strategy planning and innovation planning building were undertaken by the CEO, CFO, and CIO acting in concert as individual contributors that would process the tacit and explicit knowledge, in Figure 3 the individual process of intuiting and interpreting led to a strategy and innovation roadmap that the executive team would then introduce to groups of managers to begin the integration and institutionalizing processes. The OLI selection process occurred simultaneously, as the individuals conceived and devised their strategy and innovation plan. In order to plan for the technology roadmap (innovation planning), ABC Service Company CIO explained that the strategy outlined the direction and the constraints that the knowledge base would support. As the CIO translated the innovation planning into an explicit knowledge plan, he was able to review the knowledge gaps (translated to OLI) and direct the group integrating and institutionalizing the plan to develop the OL required to close the knowledge gaps and thus execute on the strategy.

Figure 7 Addition of OLI into 4I and 5I Framework



Summary

The primary purpose of this qualitative, single case study was to determine vital components of a model for OLI, an imperative of strategic planning and innovation (Baltar, 2013). The secondary purpose of this qualitative study included an examination of the construct of firm-specific determinants of innovation and the manner that stakeholders, armed with an awareness of these innovation determinants, inform the OLI selection process and strategic planning, the basis for the future success of the organization (Baltar, 2013; Porter, 1991). Key themes included strategy/strategic planning, and innovation. In addition to the key themes that emerged to unify concepts associated with the primary study questions, the supporting themes that developed and unified the concepts addressed in the study include the following: productivity, compliance, and tacit knowledge v. explicit knowledge.

ABC Service Company allowed sixteen employees to participate in a series of interviews. Moreover, they provided documents, records, and additional access to key personnel for follow up questions and observations. ABC Service Company provided sufficient data to yield information that identifies the base of OLI ABC put in place and performance against that base of learning inputs when aligned with the determinants of innovation and productivity.

Chapter 5: Implications, Recommendations and Conclusions

OL is critical in the realization of an organization's strategic, tactical and financial mission (Jenkin, 2013). Although there is much research on OL (Crossan *et al.*, 1999, 2003, 2010, Jenkin, 2013), a gap in extant literature leaves the process of deciding how and what new OL initiatives will be introduced to support the strategic mission of the firm. This gap leaves spend and productivity dedicated to OL at risk, as well leaders are left to question the connection of OL to competitiveness instead of exploiting such prospects.

The primary purpose of this qualitative, single case study was to determine vital components of a model for OLI, which is the selection of content of what the organization deems essential for ongoing learning initiatives and is an imperative of strategic planning and innovation (Baltar, 2013). Strategic planning and innovation are basic ingredients for the successful conception of strategic/competitive advantage, driven by the capability of an organization's stakeholders to forecast customer requirements, demand, and preferences (Bose & Ye, 2013; Kitapçı & Cömez, 2016). Strategic or competitive advantage, for purposes of this study, involve maximum revenue achievement given the execution of the most suited strategy to match customer demand and market conditions (Kaplan & Norton, 1996; Porter, 1991).

Inductive-synthesis, or grounded theory, the theoretical base employed in this study, often routinely utilizes case study and interview as a research method (Gay & Weaver, 2011; Yin 2003). The research design incorporated a semi-structured interview to stimulate observations and the collection of information concerning OL and OLI in organizations, their relationship to strategic planning and innovation efforts manufactured within the firm, and the market or performance outcomes breed. More expressly, Yin identifies interviews as the most significant form of data collection (Yin, 2014). Following the Yin perspective on case study, the research

design included three critical research questions rooted into the study design. The interview questions (Appendix A: Interview Instrument) evolved from the key research questions and formed the basis for primarily information flow in the single case study. The three research questions elicited a discussion with each respondent that rendered response data and observations that ultimately resulted in the extension of components within OL known from existing scholarly literature and blend in any detectable relationships and correlations to strategic planning, determinants of innovation, and market or performance-based outcomes.

Key research questions for instrument building.

RQ1. How does the firm's leadership implement the processes of discovery and selection of components and content the organization deems essential for ongoing learning initiatives?

RQ2. What type of information, from what different sources, informs the stakeholders of the determinants of innovation?

RQ3. How does the firm's leadership translate strategic planning and innovation into a strategic advantage?

The instrument developed (Appendix A) was utilized with all sixteen respondents that participated in the case study activities.

Implications

The implications from this research included the conclusions drawn as a result of observing key themes that evolved from case study interviews, built upon the three key study research questions. Additionally, five key themes were observed that provided contextual and substantive appreciation for the manner in which organizational leaders use learning frameworks to drive results associated with improving competitiveness and increasing returns of the firm.

The implications included an elaboration of the 4I and 5I theory that peer into the individual, group, and institutional activities of organizational leaders when involved in strategic planning, innovation planning, and executing strategies designed to match customer demand and market circumstances.

Theme One: Strategy.

The strategic planning/intent theme was absolutely a matter of alignment and timing. ABC Service Company leadership learned that they must introduce strategy and planning that would align resources with the market in a just-in-time manner. Failure to accomplish this alignment would cost, per information and interview data with the CIO and CEO, opportunity and market share. OL, and thus OLI were critical ingredients utilized by ABC Service Company leaders during years that they measured growth and scale in their company. The CEO acknowledged that strategy planning was an annual activity that resulted in a set of initiatives that the organization's leadership team launched aimed at achieving the annual strategic goals. The CEO further stated that a poorly conceived strategy or misaligned innovation roadmap created significant risk to the organization and that would take multiple future years to recover.

Theme Two: Innovation.

The observation and detection of the innovation theme proved to be critical in connecting the dots of data from the study. Innovation was the fuel for tomorrow. Without a focus on innovation, ABC Service Company leadership knew a certain loss would occur. The determinants of Innovation, per the CIO (responsible for conceiving the future technical direction of the organization) was the rough draft for OLI. Utilizing the 5th I from Jenkins (information), the CIO studied the market, applied a tacit perspective to the data he collected,

and then formulated a technology roadmap for ABC Service Company to follow that aligned with SAP and other popular enterprise software applications. For example, the CIO knew that it wasn't enough to build in future SAP innovation to the ABC technology roadmap, he must also consider the implications of cloud-based computing, in-memory database design, and intuitive and artificial intelligence. This additional consideration informed the design of OL by identifying a criterion for OLI.

In addition to the key themes that emerged to unify concepts associated with the primary study questions, unifying concepts associated with the sub purpose of this qualitative study emerged. The supporting themes that developed and unified the concepts addressed in the study include the following: productivity, compliance, tacit knowledge v. explicit knowledge. The supporting themes provided linkage to activities and priorities that otherwise appeared unrelated. The unification of seemingly unrelated activities provided a platform to holistically evaluate OL and OLI within ABC Service Company.

Theme Three: Productivity.

The theme of productivity was a unifying theme, as it was a driver that the leadership team (including all 16 respondents in the case study) would strive to attain. It is common sense that leadership would seek productivity gains. However, it is both common sense and a unifying theme when said productivity was a multi-dimensional barometer for future success. Stated differently, ABC executives pressed internal resources to involve themselves in OL activities that increased their productivity in understanding new technologies. This understanding of new technologies was a base dimension of customer demand. Thus, when the resource was productive in learning, they were more productive in their billable activities, since customers demanded the top end of expertise available on the market. The increased billable activity led to

higher utilization rates and thus, higher revenue attainment. The CFO indicated that this dimensional approach had positive impact on margin as well, as ABC Service Company charged higher bill rates to customers for their most educated/knowledgeable resources.

Theme Four: Compliance.

Despite the fact that compliance was low in the ABC Service Company environment, the theme existed and stimulated important discussion. While the data did not indicate that ABC Service Company suffered loss as a result of low compliance, more than 90% of the sixteen respondents interviewed offered their opinion that increased compliance would benefit the company and they wished to see an increase in compliance in the future. The demand for increased compliance from stakeholders responsible for outcomes directly influenced by OL and OLI is noteworthy. The CIO acknowledged that future scale in the company would only be possible with investment and improvement in compliance of OL activities.

Theme Five: Tacit knowledge v. explicit knowledge

Fourteen of sixteen respondents (or 88%) in the ABC Service Company case study preferred a tacit knowledge program over an explicit one. The explanations from the fourteen respondents included a fondness for the personalization/customization of the tacit channel, the agile nature a topic developed relevancy, storytelling, and the access to ABC executive leadership that often initiated the learning outcomes. This unifying theme shed light on a dominant knowledge type that could be critical to the organization when considering the transfer of knowledge in a number of critical scenarios, including but not limited to, project-based knowledge sharing (operational), methodology based knowledge sharing (quality management), and knowledge sharing from one generation of workers to another (succession planning).

Extending the concepts in OL with OLI.

Elaboration on OL theory provides a path to holistic understanding of OL (and OLI). Originally, the academic community was introduced to the ground breaking, multi-dimensional framework for OL, called 4I, provided an understanding of people and cognitive processing necessary to institutionalize knowledge (Crossan, Lane & White, 1999; 2010). Later, Jenkin suggested an additional “I,” Information Foraging, as a technology-enabled source for increasing organizational learning, thus the 5I framework was conceived (2013). Jenkin took the 4I framework and added a dimension to address a gap, in his case, the collection of information and introduction of that information to the process of institutionalizing knowledge. In this study, we further elaborated by introducing a granular view of how actors within the organization interact as individuals, groups, and on behalf of the institution when planning strategy and innovation elements that make up the base of a productive OLI process. The implication of further developing OL theory with the introduction of OLI is likened to introducing a steering mechanism to a powerful engine. Power alone may not spark competitive advantage; however, power focused in a targeted manner with tools and process known to shape results is research and practice worthy.

Additionally, these implications are supported by the interpretations associated with the emergence of key and secondary themes in the case study data. Key themes developed supporting the primary study purpose, and critical in theory elaboration include the following: strategy/strategic planning and intent, and innovation. The themes observed and evaluated during the study yielded contextual and substantive appreciation for the manner in which organizational leaders use learning frameworks to drive results associated with improving competitiveness and increasing returns of the firm.

Recommendations

The ability to understand or anticipate business themes that impact complex processes can be a beckon for light in an otherwise dimly lit path to improved competitiveness and successful innovation. Moreover, the advancement of a theory or framework that had, in its original state been tied to competitiveness and innovation, should trigger experimentation and exploitation of that knowledge by practitioners and academics. With such a trigger, practitioners and academics potentially possess an understanding that connects necessary knowledge inputs to plans/strategy for innovation.

While the implications from this research include an elaboration of the 4I and 5I theory that filled a gap, the implications include the forward-looking opportunity for both practitioners and future research, measuring or validating generalizability would provide context to the results from this study. Yin recognized limitations in single case study research that included truthfulness of interview responses and generalizability (Yin, 2009). The case study method introduces a “lived reality” of the participants, and thus can provide results with idiosyncratic constructs or perceptions not shared beyond the realm of the case study environment (Hodkinson and Hodkinson, 2001: 3). Future practice and research activities utilizing OLI should extend or extinguish the impact to overall competitiveness.

Recommendations for practice.

The CIO of ABC Service Company stated numerous times, business building is hard work. Anecdotally, the executive stakeholders of ABC Service Company acknowledged challenges in aligning strategy to innovation and building sustainable competitive advantage. If it were simple, one could assume all (or most) businesses would be successful. Indeed, one need only to command a basic understanding of the markets to trace the rise and fall of businesses on

an all too often basis. There are theoretical, academic rationalizations that cross over from academia to industry and practice, citing Michael Porter (1991, 2008) as one example in a group of many. Porter's research into competitive forces created a platform for practitioners to proactively consider the determinants of competitiveness and protect their organization from threats that the research identified (Porter, 1991, 2008). Perhaps in the future after additional refinement and exploitation of OLI by a community of scholars, industry and practice could hold a sturdier hand in planning for the future success of their organization. Specifically, practitioners, organizational leaders futuristically could proactively align strategic planning, the determinants of innovation, and a base of OLI customized to the organization's baseline knowledge needs to secure improved competitiveness and increased success.

Recommendations for future research.

In scholarly research, academics constantly search for gaps, opportunities for extension/elaboration. As if the body of literature in a discipline is persistently agile, scholars consume new research, interpret the findings based on their own. For academics, future research might exploit one of the following paths; the controversy of tacit and explicit knowledge usage in OL, the ability to customize a portfolio of OLI correlated to an improved outcome in innovation activities, and measuring the return of OLI creation to predict the cost of successful innovation.

Conclusions

The primary purpose of this qualitative, single case study was to determine vital components of a model for OLI, an imperative of strategic planning and innovation (Baltar, 2013). The secondary purpose of this qualitative study included an examination of the construct of firm-specific determinants of innovation and the manner that stakeholders, armed with an

awareness of these innovation determinants, inform the OLI selection process and strategic planning, the basis for the future success of the organization (Baltar, 2013; Porter, 1991).

Implications included the observation and translation of key themes (strategy/strategic planning, and innovation) and supporting themes that developed and unified the concepts addressed in the study (productivity, compliance, and tacit knowledge v. explicit knowledge). Moreover, in this study, we further elaborated the 4I (Crossan, Lane & White, 1999; 2010) and 5I framework (Jenkins, 2013) by introducing a granular view of how actors within the organization interact as individuals, groups, and on behalf of the institution when planning strategy and innovation elements that make up the base of a productive OLI process.

Recommendations directed respectively toward practice, and future research, was offered to fuel potential improvements to the practitioner's approach to create and sustain competitive advantage, and the researcher's path to qualitatively understanding OL and OLI in a holistic manner. Recommendations included a path to further explore the impact of extending the 4I and 5I framework with OLI, the importance of key themes related to OLI, and the future ability to address generalizability of the results from this single case study.

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Appendixes

Appendix A: Interview Instrument

Appendix B: Informed Consent Case Study

Appendix C: Interview guides/protocol

Appendix D: CITI Training Certificates

Appendix E: Demographic questionnaires

Appendix A: Interview Instrument

Explain the project?

The way a company does training and e-learning is important to the company's mission, yet there has been little research on this important topic. All actions planned in this project are fully planned for qualitative research and are part of a dissertation for researcher, Bridgette Chambers.

What is the purpose of this research?

This purpose of this study is to learn the process a company relies upon to select the content for corporate learning and training.

Explain Who and What is Involved

The activities include an interview between yourself and a researcher that will ask you questions related to corporate training and online learning. The interview should take approximately 2 hours of your time.

Eligibility?

You are eligible to participate if you held or more of the following titles for a minimum of 10 years: team leader, manager, director, vice president, officer, or trustee. Additionally, you must have worked for at least one US company during those ten years.

Compensation?

Everyone that is part of the interview process will receive a \$10 Starbucks gift card as thank you.

Who is the researcher?

Bridgette Chambers, NCU Doctoral Student
Email: b.chambers9890@email.ncu.edu

People interested in the project and ready to agree to participate

If you would like to be part of the research project, please reply by email to Bridgette Chambers at b.chambers9890@email.ncu.edu and include the following information:

1. Would you would like to be part of research project described in this flyer?
2. Do you think you meet the eligibility requirements?
3. Please provide a day, time, and preferred method of communication for a follow up to

discuss the next steps. Next steps include:

- Select the best method of communication: The options include: phone, video conference, LinkedIn chat feature, or email.
- Review and acceptance of informed consent form.
- Schedule time and date for interview.
- Interview

Case study Interview Questions.

Organizational structure & decision making.

43. How would you describe the organizational structure responsible for training in your organization?
44. Can you identify the participants, by title, responsible for selecting the curriculum for training options in your organization?
45. Who, or what department, within your firm is responsible for implementing training
46. Who, or what department, within your firm is responsible for the decision on what training inputs are chosen and implemented?
47. Who, or what department, within your firm is responsible for is responsible the evaluation of training as it is introduced to the organization?

Value of training.

48. On a scale of 1 to 5, 1 being the most strategic, how strategic do you think training is within your organization?
49. On a scale of 1 to 5, 1 being the most correlated, how strongly correlated do you think your success is to the training your employer provides to you?

50. On a scale of 1 to 5, 1 being the exceptionally critical, how critical is training to the future success of your company?
51. To what degree do you believe you learn key skills from the training you receive from
52. Do you feel you are more productive in your role and responsibilities as a result of the training your employer makes available to you?
53. Without access to any training, would you be successful in your role?
54. To what degree do you believe tacit, or informal knowledge informs the content options for current or future training in your firm?
55. To what degree do you believe tacit, or informal knowledge informs the overall success of training in your firm?
56. To what degree do you believe explicit, or formal knowledge informs the content options for current or future training in your firm?
57. To what degree do you believe explicit or formal knowledge informs the overall success of organizational learning and training in your firm?
58. Which would you rate as more impactful streams of knowledge, tacit or formal?
59. To what degree do you believe your firm utilizes social media to inform the content options for current or future training?
60. To what degree do you believe your firm utilizes social media to inform the overall success of training?
61. What is the basis for evaluation of alternative topics?
62. Are you asked to evaluate the effectiveness of training once it is complete?
63. To what degree do you think the training your employer provides is directly related to your productivity.

64. Do you believe you would be more, less, or equally productive if your employer stopped providing any type or level of training?
65. How many different categories of training does your employer offer? (example, HR/onboarding, technical training, systems, compliance/legal, strategy)

Selecting the inputs or curriculum for training.

66. What process does the firm use to search for the best content options for current or future training?
67. What process does the firm use to validate or scrutinize the best content options for current or future training?
68. Is the selection of training inputs related to the CEO's vision and strategy for the company?
69. Is the total cost of training a barrier to selecting the best inputs of training for your
70. Are you able to attend training provided or facilitated by third parties? If yes, do you find training in a third-party environment to be more valuable?
71. If you are able to attend training provided or facilitated by third parties, is the training aligned with the training curriculum your company utilizes for your department?

Implementation & compliance.

72. Is training a mandatory requirement for you in your role with your employer?
73. How many days a year do you estimate you spend on training activities?
74. How does your employer use customer or market data to inform the selection of your training program?

Budgeting and metrics for financial analysis.

75. What is the process for budgeting and approving training resources?

76. Is there a financial metric used by your employer to evaluate the return or financial impact of training to the organization?
77. Is training related in any way to the company's commitment to innovation? If yes, to what degree is the value from innovation included or referenced in the understanding of value of training?
78. What type of information from what different sources informs the stakeholders of the deterrents of innovation?
79. Is there a financial metric used by your employer to evaluate the return or financial impact of innovation to the organization?

Demographics.

80. Male/Female
81. Current title?
82. Highest degree obtained?
83. In the past ten years, which titles have you held? (team leader, manager, director, vice president, officer, or trustee)
84. Country where the majority of your business experience has taken place

Appendix B: Informed Consent Case Study

Introduction.

My name is Bridgette Chambers. I am a doctoral student at Northcentral University. I am managing a study to discover how organizations learn, train, and conduct e-learning. I am completing this research as part of my doctoral degree. I invite you to be part of the project.

Activities.

If you participate in this project, you will be asked to answer questions during a two hour interview.

Eligibility.

You are eligible to participate if you held or more of the following titles for a minimum of 10 years: team leader, manager, director, vice president, officer, or trustee. Also, you must have worked for at least one US company during those ten years.

You are not eligible to participate in this project if you:

If you do not meet the two eligibility requirements.

How many people does the researcher intend to interview?

I hope to include at least 15 people in this research.

Risks.

There are minimal risks in this study. Some risks include the chance you would feel uncomfortable answering questions. To reduce these risks, you can skip any question, and/or, stop the interview at any time.

Benefits.

There are no direct benefits to people that answer questions in an interview. However, there are potential benefits to businesses.

Confidentiality.

The information you provide will be kept confidential to the extent allowable by law. Some steps I will take to keep your identity confidential are:

- I will use a fake name or number to identify you.

- I will keep your name separate from your answers.

The people who will have access to your information are:

- Myself.
- My dissertation chair.
- My dissertation committee.

The Institutional Review Board may also review my research and view your information.

I will secure your information with these steps:

- Locking all printed or handwritten material in a filing cabinet.
- Locking the computer file with a password.
- Using password protection and encryption on my computer.
- I will keep your data for 7 years. Then, I will delete electronic data and destroy paper data.

Contact Information

If you have questions for me, you can contact me at:

- b.chambers9890@email.ncu.edu
- +1-630-333-5357

My dissertation chair's name is Dr. Jama Bradley. She works at Northcentral University. She is supervising me on the research. You can contact him at jbradley@ncu.edu.

If you have questions about your rights in the research, feel there is a problem, or if you are injured during your participation, please contact the Institutional Review Board at: irb@ncu.edu or 1-888-327-2877 ext 8014.

Voluntary Participation

Your participation is voluntary. If you decide not to participate there will be no penalty to you. Also, if you start and change your mind, there will be no penalty to you.

Compensation

To thank you for your willingness to participate, you will be given a \$10.00 Starbucks gift card.

Audiotaping

I would like to use a voice recorder to record your responses. You can still participate if you do not wish to be recorded.

Please sign here if I can record you:

Participant Signature

Printed Name

Date

Signature

A signature indicates your understanding of this consent form. You will be given a copy of the form for your information.

Participant Signature

Printed Name

Date

Researcher Signature

Printed Name

Date

Appendix C: Interview guides/protocol

Protocol

This study will use a semi-structured interview to elicit information about OLI in organizations. The results from the interview may also lead to candidate topics for the case study, thus the semi-structured interviews with 15 professionals will be the first component of the qualitative research collected.

Content analysis (Krippendorff, 2004) of open-ended responses to the questions are examined for specific references, themes, approaches or topics, which are then recorded and categorized. Content analysis is a staple methodology for categorizing interview data and allowing inference to other participants and to other studies on similar topics and using a similar methodology. The results from the interview may also lead to candidate topics for the case study. Content analysis will be applied to data gathered from the semi-structured interviews. Adjustments necessary to an efficient and productive case study are possible.

Case Study Interview Protocol Format

Company Industry:

Interviewer: Bridgette Chambers

Survey Section Used:

____ A: Demographics

____ B: Organizational Learning and Training

____ C: Innovation

Other Topics or Process Discussed: (open ended data to be collected if offered)

Documents Obtained: (open ended data to be collected if offered)

Post Interview Comments or Leads: (open ended data to be collected if offered)

Interview Questions (Restated)

This study will use a semi-structured interview to elicit information about OLI in organizations. The questions noted herein are incorporated from other interview planning documents and not intended to be viewed as separate or redundant questions.

Case study questions

Case study Interview Questions.

Organizational structure & decision making.

1. How would you describe the organizational structure responsible for training in your organization?
2. Can you identify the participants, by title, responsible for selecting the curriculum for training options in your organization?
3. Who, or what department, within your firm is responsible for implementing training
4. Who, or what department, within your firm is responsible for the decision on what training inputs are chosen and implemented?
5. Who, or what department, within your firm is responsible for is responsible the evaluation of training as it is introduced to the organization?

Value of training.

6. On a scale of 1 to 5, 1 being the most strategic, how strategic do you think training is within your organization?
7. On a scale of 1 to 5, 1 being the most correlated, how strongly correlated do you think your success is to the training your employer provides to you?
8. On a scale of 1 to 5, 1 being the exceptionally critical, how critical is training to the future success of your company?

9. To what degree do you believe you learn key skills from the training you receive from
10. Do you feel you are more productive in your role and responsibilities as a result of the training your employer makes available to you?
11. Without access to any training, would you be successful in your role?
12. To what degree do you believe tacit, or informal knowledge informs the content options for current or future training in your firm?
13. To what degree do you believe tacit, or informal knowledge informs the overall success of training in your firm?
14. To what degree do you believe explicit, or formal knowledge informs the content options for current or future training in your firm?
15. To what degree do you believe explicit or formal knowledge informs the overall success of organizational learning and training in your firm?
16. Which would you rate as more impactful streams of knowledge, tacit or formal?
17. To what degree do you believe your firm utilizes social media to inform the content options for current or future training?
18. To what degree do you believe your firm utilizes social media to inform the overall success of training?
19. What is the basis for evaluation of alternative topics?
20. Are you asked to evaluate the effectiveness of training once it is complete?
21. To what degree do you think the training your employer provides is directly related to your productivity.
22. Do you believe you would be more, less, or equally productive if your employer stopped providing any type or level of training?

23. How many different categories of training does your employer offer? (example, HR/onboarding, technical training, systems, compliance/legal, strategy)

Selecting the inputs or curriculum for training.

24. What process does the firm use to search for the best content options for current or future training?

25. What process does the firm use to validate or scrutinize the best content options for current or future training?

26. Is the selection of training inputs related to the CEO's vision and strategy for the company?

27. Is the total cost of training a barrier to selecting the best inputs of training for your

28. Are you able to attend training provided or facilitated by third parties? If yes, do you find training in a third-party environment to be more valuable?

29. If you are able to attend training provided or facilitated by third parties, is the training aligned with the training curriculum your company utilizes for your department?

Implementation & compliance.

30. Is training a mandatory requirement for you in your role with your employer?

31. How many days a year do you estimate you spend on training activities?

32. How does your employer use customer or market data to inform the selection of your training program?

Budgeting and metrics for financial analysis.

33. What is the process for budgeting and approving training resources?

34. Is there a financial metric used by your employer to evaluate the return or financial impact of training to the organization?

35. Is training related in any way to the company's commitment to innovation? If yes, to what degree is the value from innovation included or referenced in the understanding of value of training?
36. What type of information from what different sources informs the stakeholders of the deterrents of innovation?
37. Is there a financial metric used by your employer to evaluate the return or financial impact of innovation to the organization?

Demographics.

38. Male/Female
39. Current title?
40. Highest degree obtained?
41. In the past ten years, which titles have you held? (team leader, manager, director, vice president, officer, or trustee)
42. Country where the majority of your business experience has taken place

Appendix D: CITI Training Certificates

Bridgette Chambers

The CITI Number is 3593289

Expiry 23 Nov 2018

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM)
COMPLETION REPORT - PART 1 OF 2
COURSEWORK REQUIREMENTS*

*NOTE: Scores on this Requirements Report reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

- Name: Bridgette Chambers (ID: 3593289)
- Email: b4@ncu.edu
- Institution Affiliation: Northcentral University (ID: 196)
- Institution Unit: Business
- Curriculum Group: Human Research
- Course Learner Group: 808 Required Modules for NCU
- Stage: Stage 1 - Basic Course
- Report ID: 20542121
- Completion Date: 23-Nov-2016
- Expiration Date: 23-Nov-2018
- Minimum Passing: 65
- Reported Score*: 94

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Belmont Report and CITI Course Introduction (ID: 1127)	14-Nov-2016	3/3 (100%)
History and Ethical Principles - SBE (ID: 490)	14-Nov-2016	5/5 (100%)
Defining Research with Human Subjects - SBE (ID: 491)	14-Nov-2016	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	14-Nov-2016	5/5 (100%)
Assessing Risk - SBE (ID: 503)	14-Nov-2016	5/5 (100%)
Informed Consent - SBE (ID: 504)	14-Nov-2016	5/5 (100%)
Privacy and Confidentiality - SBE (ID: 505)	14-Nov-2016	5/5 (100%)
Research with Prisoners - SBE (ID: 506)	14-Nov-2016	5/5 (100%)
Research with Children - SBE (ID: 507)	14-Nov-2016	5/5 (100%)
Research in Public Elementary and Secondary Schools - SBE (ID: 508)	14-Nov-2016	5/5 (100%)
International Research - SBE (ID: 509)	15-Nov-2016	5/5 (100%)
Internet-Based Research - SBE (ID: 510)	23-Nov-2016	4/5 (80%)
Unanticipated Problems and Reporting Requirements in Social and Behavioral Research (ID: 14926)	23-Nov-2016	4/5 (80%)
Cultural Competence in Research (ID: 15166)	23-Nov-2016	5/5 (100%)
Conflicts of Interest in Research Involving Human Subjects (ID: 488)	23-Nov-2016	5/5 (100%)
Consent and Subject Recruitment Challenges: Remuneration (ID: 18881)	23-Nov-2016	5/5 (100%)
Vulnerable Subjects - Research Involving Workers/Employees (ID: 483)	23-Nov-2016	4/4 (100%)
Gender and Sexuality Diversity (GSD) in Human Research (ID: 16564)	23-Nov-2016	5/5 (100%)
Research with Persons who are Socially or Economically Disadvantaged (ID: 18538)	23-Nov-2016	5/5 (100%)
Research with Subjects with Physical Disabilities & Impairments (ID: 18657)	23-Nov-2016	4/5 (80%)
Basic Institutional Review Board (IRB) Regulations and Review Process (ID: 2)	23-Nov-2016	5/5 (100%)
Records-Based Research (ID: 5)	23-Nov-2016	3/3 (100%)
Avoiding Group Harms - U.S. Research Perspectives (ID: 14082)	23-Nov-2016	3/3 (100%)
Research and HIPAA Privacy Protections (ID: 14)	23-Nov-2016	4/5 (80%)
Data Management (PCR-Basic) (ID: 16600)	23-Nov-2016	4/5 (80%)
Research Misconduct (PCR-Basic) (ID: 16604)	23-Nov-2016	4/5 (80%)
Research, Ethics, and Society (RER) (ID: 15198)	23-Nov-2016	3/5 (60%)

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The CITI Number is 15286250

Expiry 21 Feb 2018

COLLABORATIVE INSTITUTIONAL TRAINING INITIATIVE (CITI PROGRAM) COMPLETION REPORT - PART 1 OF 2 COURSEWORK REQUIREMENTS*

* NOTE: Scores on this [Requirements Report](#) reflect quiz completions at the time all requirements for the course were met. See list below for details. See separate Transcript Report for more recent quiz scores, including those on optional (supplemental) course elements.

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• **Curriculum Group:** Human Research
• **Course Learner Group:** IRB Required Modules for NCU
• **Stage:** Stage 1 - Basic Course

• **Report ID:** 15286250
• **Completion Date:** 22-Feb-2016
• **Expiration Date:** 21-Feb-2018
• **Minimum Passing:** 85
• **Reported Score*:** 92

REQUIRED AND ELECTIVE MODULES ONLY	DATE COMPLETED	SCORE
Research Misconduct (RCR-Basic) (ID: 16604)	21-Feb-2016	5/5 (100%)
Internet-Based Research - SBE (ID: 510)	21-Feb-2016	4/5 (80%)
Belmont Report and CITI Course Introduction (ID: 1127)	21-Feb-2016	3/3 (100%)
History and Ethical Principles - SBE (ID: 490)	21-Feb-2016	4/5 (80%)
Defining Research with Human Subjects - SBE (ID: 491)	21-Feb-2016	5/5 (100%)
The Federal Regulations - SBE (ID: 502)	21-Feb-2016	4/5 (80%)
Assessing Risk - SBE (ID: 503)	21-Feb-2016	5/5 (100%)
Informed Consent - SBE (ID: 504)	22-Feb-2016	4/5 (80%)
Privacy and Confidentiality - SBE (ID: 505)	21-Feb-2016	5/5 (100%)
Conflicts of Interest in Research Involving Human Subjects (ID: 488)	21-Feb-2016	5/5 (100%)

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Appendix E: Demographic Questionnaires

Demographic analysis

Previous research (Arif, Mohammed & Gupta, 2015; Arif, Egbu, Malik, & Khalafan, 2009; Chugh, 2015; Leufven, M., Vitrakoti, R., Bergstrom, A, Ashish, K., & Malqvist, M.,2015; Nonaka,1991; Song, & Chernack, 2008) suggested that there are ethnic, country of origin and sex differences, and other demographic differences in the findings in OL and knowledge research. For this dissertation, demographic data will be used to more completely characterize and explain the results of the research question data, especially in the analysis of the interview results. However, the collection of demographic data will follow all ethical guidelines to ensure anonymity of the participants.

Participants' demographics

It is standard practice to collect demographic data on participants, both to characterize the sample and to provide insight on how why participants respond differently to interview questions. The following data will be collected from interview participants.

- Gender
- Current professional title
- Highest academic degree obtained
- Country where the majority of your business experience has taken place

