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Exploring Knowledge Management Practices in Service-Based Small Business Enterprises

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This is to certify that the doctoral study by

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2015

Abstract

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by

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MBA, University of California, 1992

BSEE, University of Evansville, 1987

Doctoral Study Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Business Administration

Walden University

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Abstract

Small business enterprises (SBEs) are significant contributors to business growth and employment in the United States, but despite governmental support, the failure rate of SBEs is high. Some small business leaders lack the critical management skills to detect or discover when underperformance in revenue-generation is due to gaps in organizational knowledge or business practices associated with managing knowledge assets. Guided by the knowledge-based view of the firm, the purpose of this multiple case study was to address that gap by exploring the skills needed by leaders to understand how deficiencies in their knowledge management practices contribute to underperformance. Semistructured interview data were collected from a sample of 10 small business leaders in the northeast and west. Data from publicly available documentation consisting of sales brochures, press releases, and participant company websites were also collected. Data analysis entailed using keyword frequency comparisons, coding techniques, and cluster analysis. The key themes indicate that the participants' document management practices and misaligned core business practices impeded value creation. The recommended change in business practices for small business leaders is to formalize social engagement with customers, use document management tools, and adopt process management techniques. The implications for social change include mitigating the harmful effects of business failure on society associated with job loss, stress-related disabilities, and reduced charitable donations to groups serving disadvantaged citizens. The beneficiaries of this research include small business leaders, business practitioners, and policy makers.

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Dedication

I dedicate this accomplishment to the memory of my parents. I am the son of exceptional parents born during the Great Depression and grew up in the challenging times of the civil rights movement. My mother had the intelligence and wish to attend college but could not and my father served in the military for over 20 years. Through their experiences, I had the good fortune to have instilled in me the promise of education and the drive to reach my potential through hard work, dedication, and perseverance. On this occasion, I am fulfilling the legacy my parents handed to me so many years ago. My sincere hope is this accomplishment will be a source of inspiration to future generations in my family and symbolize that success is a result of commitment, passion, perseverance, and hard work.

Acknowledgments

Completing the doctoral journey is a collaborative enterprise. I want to thank my research chairperson, Dr. Lawrence Ness, personally, who was always willing and ready to help, encourage, and advise me through the successful conclusion of this doctoral journey. You have my enduring gratitude. Thank you to Dr. Kevin Davies and Dr. Michael Ewald, who provided invaluable suggestions to improve the quality of my research. I want to offer a special note of recognition to Dr. Gene Fusch and Dr. Reginald Taylor for their encouraging support throughout the doctoral study process. I appreciate your efforts and recognize the impact of your recommendation on this study. My sincere thanks and deep appreciation to the individuals who took part in this study; your support was invaluable.

The support of my family and grandchildren is a blessing, and they continue to inspire me every day. To my wife, Kennette, a heartfelt and special thank you for your steadfast support and sacrifices while I followed this educational journey. Last, to my parents, Marie and James, who remain with us in spirit, each of whom made great sacrifices to invest in my success. Finally, as always, I thank God for the blessing placed on my family and me.

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Section 1: Foundation of the Study

Knowledge obsolescence is growing rapidly, especially in high-technology markets (Gasik, 2011). Huggins and Weir (2012) suggested that firms that efficiently access external and continually improve their internal *knowledge assets* remain competitive over multiple business cycles. Information and communication technologies (ICT) are the driving force behind the shift in competitiveness in the marketplace. The increased use of technology drove the rapid pace of innovation, forcing firms and individuals to gain new skills and changes in the workplace (Chesley, 2014; Powell & Snellman, 2004). Thus, the success of a company is dependent on its capability to convert knowledge into value (Giju, Badea, López Ruiz, & Nevado Peña, 2010; Grant, 1996).

Background of the Problem

Economists assert that the change from a manufacturing to a knowledge-based economy is part of a fundamental economic shift in the composition of the gross domestic product (Powell & Snellman, 2004). However, creating effective metrics to discover the rate of technological change and the prevalence of this shift in the marketplace has been challenging (Nagaoka, Motohashi, & Goto, 2010; Powell & Snellman, 2004). Researchers have followed two lines of inquiry in an attempt to quantify the rate of change toward a knowledge economy. The first metric focuses on the number of patents issued by the U.S. Patent and Trademark Office (USPTO) as a signal of creating knowledge that has economic value (Meza, 2011; Nagaoka et al., 2010). The number of patents issued by the USPTO increased from 47,000 to over 168,000 within a

20-year period starting in 1983 (Nagaoka et al., 2010). This statistic represents an increase in creating new knowledge and innovation (Powell & Snellman, 2004).

The second metric concentrates on science and engineering workforce growth as a signal of increased *knowledge capital*. According to Powell and Snellman (2004), employment in science and engineering grew by 159% between 1980 and 2000. The growth rate in this 20-year period was 4.0% faster than the growth of the entire U.S. labor workforce. This statistic is significant when coupled with the rising demand for workers with specialized skills.

Nag and Gioia (2012) noted that *knowledge management* is a core factor in creating competitive advantage. For the near term, research reports indicate the American educational system is not producing enough trained science and engineering professionals, commonly referred to as *knowledge workers* (Nag & Gioia, 2012). As noted in a report published by the Organization for Economic Co-operation and Development (OECD), American educational ratings have declined. The United States ranks 33rd in reading, 27th in math, and 22nd in science globally (OECD, 2010), which highlights a potential problem for businesses where the demand for knowledge workers is greater than the supply. This shortage, while driving higher wages for skilled workers, could affect business performance because of the financial constraints experienced by small business enterprises (SBEs). Rasmussen and Nielsen (2011) concluded that developing, transforming, and applying firm-specific knowledge assets is a critical part of innovative performance. Researching how SBE leaders manage their knowledge assets to support decision making and problem solving is central to understanding the effect that

knowledge management practices (KMPs) have on firm performance (Sharabati, Jawad, & Bontis, 2010).

A large body of literature exists linking the quality of decision making, commitment to employees, and innovation with the financial success of SBEs (Jansen, Curseu, Vermeulen, Geurts, & Gibcus, 2011; Liberman-Yaconi, Hooper, & Hutchings, 2010; Rodrigues & Raposo, 2011). The acquisition (*acquisition capacity*) and transformation (*transformation capacity*) of individuals to convert data into knowledge are part of decision making (Hacklin & Wallnöfer, 2012). Knowledge management practices support organizational decision making about how, when, and where to create, apply, or evaluate new knowledge (St-Pierre & Audet, 2011).

Decision making by trial and error is a sign of inefficient KMPs. This approach to learning benefits the individual closest to the problem but not the company (Amit & Zott, 2012; Vostroknutov, 2012). Despite the importance of managing knowledge in decision making, there has been little research on the use and benefit of KMPs within the context of service-oriented SBEs with fewer than 25 employees.

Researchers discuss in the literature business performance with financial and nonfinancial components (Bustinza, Arias-Aranda, & Gutierrez-Gutierrez, 2010; Soderberg, Kalagnanam, Sheehan, & Vaidyanathan, 2011; St-Pierre & Audet, 2011). Business leaders understand economic principles such as return on investment, return on assets, liquidity, profit, and cash flow. Examples of nonfinancial business performance indicators are market share, customer loyalty, and competitive position (Soderberg et al., 2011; Thakur & Hale, 2013).

A standard business tool used to report business performance is the *balanced scorecard* (Greiling, 2010; Soderberg et al., 2011). However, it can be challenging to quantify the impact of nonfinancial performance metrics (directly or indirectly) on firm performance. Assessing nonfinancial performance rely on subjective decisions by managers that are susceptible to error (St-Pierre & Audet, 2011). For example, how the knowledge assets of a new employee joining the company, mainly a nonfinancial decision (excluding salary), will affect the future performance or value of the company is unknown. However, managers who consistently make value-creating business decisions can increase the value of the firm (Mielcarz & Wnuczak, 2011). Conversely, decisions that do not create long-term value can result in poor business performance, financial distress, or business failure in extreme cases (Ropega, 2011). Therefore, mitigating the causes associated with poor business performance may positively reduce the incidence of SBE bankruptcies and business failures (Mielcarz & Wnuczak, 2011).

Researchers have developed statistical models such as multivariate and regression analysis to predict business bankruptcies in large firms. However, these models are less useful for predicting the failure of SBEs because of the lack of historical financial and performance data (Yoon & Kwon, 2010). Irrespective of the value of various methods to predict business failure, the bankruptcy code provides small business owners a new beginning by dismissing a large percentage of their debts from future claims by creditors. The legal procedure for this new beginning involves business reorganization (Chapter 11) or asset liquidation (Chapter 7) filings with the federal bankruptcy court. However, while the bankruptcy code provides relief on the liability side of the balance sheet, the

perceived lack of creditworthiness of failed companies continues to burden reorganized companies. Only addressing balance sheet liabilities is not enough for business survival if the asset creation side of the enterprise is weak. Data provided by the Small Business Administration in Table 1 show combined statistics on business creation, closures, and bankruptcy filings between 1997 and 2003. This table indicates that the number of business failures and bankruptcies on average exceeded the number of companies created between 1997 and 2003.

Table 1

Descriptive Statistics for Business Turnover From 1997–2003 (000s)

Category	Range	Min	Max	*M*	*SD*
New firms	17.7	572.9	590.6	584.2	7.5
Firm closures	39.0	530.0	569.0	545.4	14.2
Bankruptcies	18.8	35.0	53.8	40.7	6.5

Note. $N = 7$. *SD* = standard deviation. From *Small Business Economic Indicators for 2003: A Reference Guide to the Latest Data on Small Business Activity, Including State and Industry Data*, by the Small Business Administration, 2004, Washington, DC: U.S. Government Printing Office, retrieved from http://archive.sba.gov/advo/stats/sbei03.pdf

Problem Statement

Managing knowledge assets and resources is a critical factor in creating competitive advantage (Nag & Gioia, 2012). In addition, researchers Giju et al. (2010) and Grant (1996) found a link between financial performance and the capacity of the organization to convert knowledge into value. In the period between 1997 and 2003 (Table 1), the value of knowledge assets for small businesses increased significantly, as

demonstrated by entrepreneurs creating an average of 584,200 SBEs each year (Small Business Administration, 2004).

During this same period, an average of 586,100 small businesses filed bankruptcy or closed, reflecting a failure rate of over 100% for companies in business for fewer than 6 years (Small Business Administration, 2004). The general business problem is the underperformance (bankruptcy or failure) of SBEs resulting in the loss of business value. The specific business problem is that leaders of SBEs may lack critical skills to detect or discover when underperformance in revenue-generation is because of gaps in organizational knowledge or business practices associated with managing knowledge assets.

Purpose Statement

The purpose of this qualitative multiple case study was to explore the critical capabilities that leaders of SBEs may use to determine when underperformance in revenue-producing activities is because of gaps in organizational knowledge or business practices related to managing knowledge assets. I interviewed 10 participants who performed in revenue-producing job roles, using a semistructured interview protocol. The number of participants selected balanced the limited resources available and the need to collect enough data to achieve *data saturation* (O'Reilly & Parker, 2012). The participants purposely selected to take part in the study resided in the northeast and west. Identifying this initial range of participants ensured a sufficient pool of individuals to take part in the study.

SBEs employ 46% of all private workers and created nearly 50% of all net new jobs from 2002 through 2010 (Kobe, 2012). The findings reported in this study may be valuable to SBE service providers, consultants, governmental policy makers, and business practitioners. Improving the quality of information available to these stakeholders may allow them to develop tools tailored to the needs of SBEs and may help reduce the number of business failures. Decreasing business failures can favorably affect local economies and communities while mitigating the long-term financial, physical, and adverse psychological effects of business failure on society.

Nature of the Study

Research into KMPs focuses on competitive strategy (Porter, 1980), *organizational learning* (Sun & Anderson, 2010), and the *resource-based view* (RBV) of the firm (Grant, 1996). Management practices vary widely across firms for various reasons; therefore, a customized research design tailored to the research question(s) was essential. The conceptual framework and literature review guided the development of research questions and supported selecting a research design for this study. These questions were necessary to gain an understanding of the KMPs in service-oriented SBEs. Shah and Corley (2006) and Yin (2014) noted that qualitative studies are suitable and necessary for gathering context-intensive and rich data through direct contact with participants in their natural environment. Direct contact with participants provides researchers with the opportunity to gain a comprehensive understanding of complex issues.

Embedded in the daily activities of employees are various management practices. The information employees use to perform their job duties, the business processes they engage in, and how they behave in organizational settings are essential parts of a knowledge management system. Therefore, the direct observation and evaluation of KMPs is a challenge. Selecting a qualitative case study research design is consistent with exploring research problems where measuring intangible research variables related to experiences, daily practices, or behaviors is difficult. Qualitative research, directed by research questions, explores social issues or problems that individuals or groups seek to understand (Shah & Corley, 2006). Quantitative research requires statistical measurement, testing, and comparison of research variables guided by hypotheses. A quantitative research design was inappropriate because of the exploratory nature of this study and the intangible characteristics of the research variables.

Methodological similarities exist among ethnographic, narrative, and phenomenological research designs. These research methods focus on cultural, ethnic, or shared lived experiences of research participants as the basis of scientific inquiry (Denzin & Lincoln, 2011). I evaluated alternative qualitative research methods and determined that they were not suitable for exploring management practices within a small-business, knowledge-intensive environment. The other qualitative methods were not suitable because (a) each company was likely to have different policies, procedures, and practices, eliminating a phenomenological study; (b) a multicultural employee population disqualified an ethnographic study; and (c) narrative research was not appropriate, as the

study was not about any person. Conversely, case studies support research in situations where existing knowledge is minimal or limited.

In addition, each research methodology requires different procedures for conducting scientific inquiries and has methodological limitations. To explore the problem under study, aligning the research question(s), data collection, and data analysis phases of the project was necessary. Notably, narrative research entails collecting wide-ranging information about participants to understand how their lives fit the story narrative; ethnographic research requires researchers to be knowledgeable about the cultural anthropology of the group under study; and phenomenological studies force investigators to ensure that all participants experienced the same phenomenon. Conducting this study using quantitative research methods would have resulted in misalignment with the problem statement or the purpose of this study. Conversely, case study research is an excellent qualitative method when business situations are unique, identifiable, and clearly defined to simplify analysis or comparison with other business cases. In situations where existing knowledge is minimal or limited, case study research is a useful method for exploring topics of interest (Yin, 2014). Section 2 covers the justification for selecting a qualitative research design and specifically the multiple case study approach for this study.

In this qualitative study, I used face-to-face and telephone semistructured interviews to explore the KMPs of a purposive sample of study participants. The participants interviewed were primary decision makers and key employees working in job roles such as sales, marketing, finance, and customer service. The criteria used to

select these individuals included (a) their involvement in the KMPs of the company, (b) their knowledge about the core business processes related to revenue-production, (c) their performance in positions likely to provide contextually rich information, and (d) the expectation that they would benefit from participation in this study (Irvine, Drew, & Sainsbury, 2012; Whiting, Kendall, & Wills, 2013). Participant interviews took place using a semistructured set of questions. These questions, exploratory in nature, had an open-ended format. If interesting lines of inquiry arose during an interview, they might prompt further unstructured investigation or unscripted follow-up questions.

The target SBEs selected for participation in the study had fewer than 25 employees. The criteria for selecting organizations with fewer than 25 employees were consistent with the following: (a) the assumption that SBEs targeted for this study had financial limitations requiring managers to choose between alternative solutions, or trade-offs, rather than investment decisions (see the Assumptions section for a detailed explanation); (b) knowledge management practices for companies of this size being nonexistent; and (c) the relative ease of tracking and mapping information flows through the organization. As a matter of convenience, in selecting these companies, I used geography, resources available to me, and the size of the employee population as the primary criteria.

Participant contact occasionally occurred by telephone or email for follow-up purposes. Selecting research participants who had relevant information about revenue generation, directly engaged in revenue-producing business processes, or had experience with the KMPs of the company was essential to the success of this study. In this study,

revenue-producing activities included (a) prospecting and lead generation, (b) qualifying opportunities, (c) decisions to accept or reject opportunities, (d) performing financial analysis, (e) creating sales strategies, (f) developing sales proposals, (g) contract negotiation, and (h) closing and contract execution.

Access to participants occurred through direct personal contact in private meetings or telephone interviews. I selected participant companies in the northeast and west for convenience and because they were close to my geographic location. Selection of companies in a small geographic area created a geographic limitation. However, this restriction was acceptable because the goal of this study was not to generalize the findings to a broader population (Bloom, Eifert, Mahajan, McKenzie, & Roberts, 2012).

Research Question

Information and communication technology is a driving force behind the shift in innovation and competitiveness in the marketplace. Huggins and Weir (2012) noted that employers must continually invest in organizational knowledge assets to mitigate deterioration of their competitive position. Therefore, the success of the company in a knowledge-based economy is dependent on the actions of management to champion the necessary processes and practices to transform knowledge into value (Giju et al., 2010; Grant, 1996).

The central research question in this study was the following: What are the critical capabilities that leaders of SBEs need to detect or determine when underperformance in revenue-generating activities is due to gaps in organizational knowledge or business practices related to managing knowledge assets?

Interview/Survey Questions

Interviews with individual participants took place through face-to-face meetings and teleconferences using open-ended interview questions. To explore the research question, I developed 15 interview questions synthesized from an exhaustive review of the literature. The conceptual framework guided the development of interview questions to explore gaps, patterns, and possible themes in the areas of (a) business practices, (b) organizational knowledge, and (c) critical capabilities that may affect revenue-production. The basis for limiting the interview protocol to 15 questions concentrated on balancing the resources available to me and collecting sufficient data to achieve data saturation. In addition, the interviews concluded within 45 minutes to minimize workplace disruption. The last interview question allowed participants an opportunity to comment on any topic of importance to them. The interview questions used to support data collection and exploration of the research question were as follows:

1. What is the most valuable information needed to perform your job function with respect to supporting revenue-production? Revenue-generating activities include (a) prospecting/lead generation; (b) qualifying opportunities; (c) decisions to accept or reject opportunities; (d) performing financial analysis; (e) creating sales strategies; (f) developing sales proposals; (g) contract negotiation; and (h) closing/contract execution.
2. What are the source(s) of information?
3. Why do you use these sources of information?
4. What are your opinions about the quality of the information received from

each source? What methods do you use to verify this information?

5. How does the information you collect flow through the organization?
6. What are your opinions about how the quality of information you receive affects organizational success in producing revenue?
7. How do you find out if you missed revenue growth opportunities?
8. How do you establish revenue goals or objectives?
9. How would you characterize your performance in meeting those goals over the past 3 years?
10. What training programs, seminars, or conferences have you attended in the past 12 months?
11. What gaps in knowledge, if any, do you feel you have or need to reduce to be more effective in your job?
12. What tools do you use to manage sales or other revenue-generating activities?
13. How do you decide to pursue or pass on potential revenue-producing opportunities?
14. In your opinion, what organizational capabilities are critical to the long-term success of the company?
15. Do you have any additional information or comments to add to our discussion?

In addition, the interview protocol contained background questions to classify the job role of each participant to ensure accurate coding of the data:

1. Please provide your title and describe your duties and job responsibilities.

2. How long have you performed in this position?
3. What other positions have you held in your current organization or other organizations?

The interview protocol is in Appendix B.

Conceptual Framework

The conceptual framework used in this study was the knowledge-based view (KBV) of the firm (Nickerson & Zenger, 2004). The KBV of the firm has foundations in research streams on organizational learning, technology management, and behavioral cognition. In the KBV of the firm, expertise and knowledge production constitute the most strategically valuable resource and the primary source of competitive advantage (Grant, 1996). In the literature on the KBV of the firm, a distinction exists between knowing how (tacit knowledge) and knowing about (explicit knowledge). *Explicit knowledge* is tangible, easily transferred thorough communication, and shared with other users at a small cost, approaching zero. *Tacit knowledge* is intangible, and observation is visible only through use. Knowledge gained through practice is inefficient and costly to transfer between individuals. Therefore, tacit knowledge is difficult to measure. The efficiency of knowledge transfer, analyzed using *absorptive capacity,* relates knowledge adsorption to the recipient's ability to integrate new knowledge with existing knowledge. The difference between the two types of knowledge is the method and mechanism of knowledge transfer (Grant, 1996).

Underpinning the KBV of Nickerson and Zenger's (2004) research is the belief that all firms have foundational knowledge and initial capabilities that form the

fundamental limits of their capacity to convert information into actionable managerial insights. Unique or specialized knowledge coupled with organizational capabilities translates into competitive advantages or value-creating outputs. In practice, when new business opportunities or challenges emerge, executives, managers, and employees (collectively referred to as *actors*) evaluate whether enough information is available within the organization or whether additional knowledge acquisition from external sources is required.

Nickerson and Zenger (2004) noted that actors search for external knowledge by direct, exploratory, or heuristic searches. Experiences guide direct searches, and in cases where limited experience exists, searches continue using trial and error approaches (exploratory searches). Direct searches are suitable for business problems that are minimally dependent on other factors, making decomposition easier into multiple independent decisions (Nickerson, Yen, & Mahoney, 2011; Nickerson & Zenger, 2004). For example, the purchase of a new television consists of several subdecisions such as screen size, resolution, and display video technology. Each decision is independent, indicating a low level of interaction between the variables or, in a business context, the need to collaborate with other actors.

Theory-based algorithms or heuristic searches speed problem solving by providing a basis for evaluating information (Nickerson & Zenger, 2004). Heuristic searches are suitable for integrated business problems that are complex and nondecomposable (Nickerson & Zenger, 2004; Nickerson et al., 2011). The complexity of nondecomposable problems requires knowledge searches that rely on the *cognitive*

maps of individuals or groups, each with separate and distinct knowledge bases relevant to the solution. The main idea is that each actor can perform information searches for a subset of the solution, but the final solution requires a transfer of knowledge between actors.

However, heuristic search approaches are subject to knowledge-sharing hazards. First, self-interest discourages actors from sharing knowledge without some form of compensation, reward, or recognition. Second, actors engage in a pattern of searches designed to augment their specialized knowledge while avoiding efforts to share newly acquired knowledge (Nickerson & Zenger, 2004).

Limited resources, capabilities, and the quality of data affect the likelihood, speed, and cost of finding value-creating solutions. The KBV of the firm provides a solid conceptual foundation to explore the KMPs of service-oriented SBEs. In addition, the KBV of the firm provides practitioners with insights about how the use of knowledge assets affects decision making, problem solving, resource allocation, and business performance results.

The KBV provides a direct connection between theory and this study. Because SBEs have constraints in capital, personnel, and systems, resource management is a critical issue related to knowledge acquisition, creation, and transfer. Applying the KBV to this study, I expected the propositions contained in the conceptual framework to allow participants to expose and me to explore the embedded aspects of their knowledge management practices in relation to problem solving, decision making, revenue generation, and resource allocation within an SBE environment. Further discussion of

key management theories and propositions related to the conceptual framework is contained in the literature review section.

Definition of Terms

This section contains definitions for key terms used in this study.

Acquisition capacity: A firm's capacity to discover, recognize, evaluate, and acquire external knowledge that is essential to the organization (Camisón & Forés, 2010).

Absorptive capacity: The ability to identify valuable information, integrate (understand) it, and apply it commercially for profit (Jiménez-Barrionuevo, García-Morales, & Molina, 2011).

Analytical generalization: A form of generalization used in case studies in which existing theories guide analytical comparisons or deviations with the empirical results of the study (Yin, 2014).

Assimilation capacity: The ability to analyze, process, interpret, and understand external knowledge brought into the organization (Jiménez-Barrionuevo et al., 2011).

Balanced scorecard: A tool used by managers to align strategic objectives with business strategies by focusing on nonfinancial drivers of performance, internal business processes, and customer satisfaction metrics (Soderberg et al., 2011).

Barrier to erosion: An obstacle or obstruction preventing replication by competitors to protect sources of competitive advantage (Jacks, Palvia, Schilhavy, & Wang, 2011).

Causal ambiguity: A situation where the success or outcome of an action or strategy is hard to retrace due to the uncertainty of identifying cause-and-effect

relationships (Beleska-Spasova & Glaister, 2013).

Cognitive map: A representation of simplified solution landscapes based on the knowledge of an individual or group used to choose search patterns to increase the likelihood of converging on a value-creating solution quickly (Nickerson & Zenger, 2004).

Coordination cost of information processing: Business processes designed to minimize acquisition, computation, and communication costs (Kaynak & Carr, 2012).

Data saturation: A situation that occurs in the data analysis phase of a case study where no new recurring patterns or themes emerge from the data (Yin, 2014).

Disruptive innovation: An innovation that makes current technology, processes, practices, or behaviors obsolete by developing new markets or functionality (D. Yu & Hang, 2010).

Explanation building: An advanced form of *pattern matching* in which a researcher builds an explanation for a phenomenon by developing a set of causal links about how and why an event occurred (Yin, 2014).

Exploitation capacity: A firm's capacity to integrate acquired, assimilated, and transformed knowledge in its business operations, procedures, and routines (Camisón & Forés, 2010).

Information acquisition capability: Capacity of an organization to collect data from customers, competitors, financial statements, research reports, consultants, and employees (Akgün, Byrne, & Keskin, 2007).

Information cues: Processing information by humans based on interpretation and

judgment (Savolainen, 2009).

Information dissemination capability: Capacity of an organization to distribute and share information (Akgün et al., 2007).

Knowledge asset: Promotes creating new ideas or documentation to simplify learning, storage, or transfer (Rasmussen & Nielsen, 2011).

Knowledge audit: Examining organizational systems, procedures, and personnel to determine where knowledge deficiencies exist (Burnett, Williams, & Grinnall, 2013).

Knowledge-based viewpoint (KBV): In an organization, this emerging management theory focuses on knowledge as the primary source of competitive advantage (Grant, 1996).

Knowledge capital: Ratio of sales revenue directly related to innovation and total sales (Rasmussen & Nielsen, 2011).

Knowledge management: A set of concepts, principles, and practices used to create, convert, store, transfer, share, and apply the knowledge of the firm (Nag & Gioia, 2012).

Knowledge object: A dynamic, time-dependent model of knowledge that has material, informational, and social properties (Borgo & Pozza, 2012).

Knowledge obsolescence: The accelerating pace of data generation, especially in fields where professionals work with information and ideas that are subject to rapid change, poses a risk of obsolescence; therefore, today's skills and knowledge are inadequate to perform effectively in the future (Gasik, 2011).

Large world: A scenario where relevant information is unknown and estimated,

and the future is uncertain, thus violating a critical requirement of rational decision theory (Gigerenzer & Gaissmaier, 2011).

Literal replication: Experimentation used to predict the outcome of similar results according to a theory or conceptual framework (Yin, 2014).

Organizational learning: Capabilities within an organization that enable improved performance based on experience, repetition, experimentation, or analysis of past events (Sun & Anderson, 2010).

Participatory management: Refers to involving employees or other stakeholders in the decision-making process (Cheung & Wu, 2011).

Pattern matching: An approach used to compare empirically identified and predicted patterns based on theoretical or conceptual frameworks (Yin, 2014).

Purposeful sample: A sampling method used to select participants in a nonrandom, deliberate manner to achieve a goal (Marshall & Rossman, 2011).

Replication logic: A judgment by a researcher as to the number of cases needed for literal or theoretical replication in a study. For example, if a researcher wants a high degree of certainty (theoretical replication) about the findings, the study requires more cases (Yin, 2014).

Resource-based viewpoint (RBV): A management theory in which organizations consist of resources and capabilities that create value (Grant, 1996).

Rival explanations: An alternate theory or explanation used to predict the results of a phenomenon better than the original theory (Yin, 2014).

Small worlds: Scenarios where all relevant alternatives, results, and probabilities

are clear as part of the decision-making process (Gigerenzer & Gaissmaier, 2011).

Theoretical replication: Investigation of an event used to predict contrasting results according to a theory or conceptual framework (Yin, 2014).

Thought unit: A unit or grouping of remarks expressing a complete idea or concept (Nyberg, Moliterno, Hale, & Lepak, 2012).

Transformation capacity: A firm's capacity to aid in the transformation of existing knowledge into new knowledge (Jiménez-Barrionuevo et al., 2011).

Assumptions, Limitations, and Delimitations

This section of the study contains an outline of the assumptions, limitations, and delimitations that established the boundaries for this study.

Assumptions

Qualitative research begins with certain assumptions made or theories adhered to by researchers (Denzin & Lincoln, 2011; Shah & Corley, 2006). This section covers key assumptions critical to the study that may be true but not verified. First, all firms have knowledge assets that create value for them. An essential part of this study involved exploring the use of knowledge assets in various business environments. Second, each small business included in the study had a profit motive and was actively exploring opportunities to improve profitability, find new customers, effectively manage the cash flow of the company, and gain access to information technology-based products or services. Third, study participants were knowledge workers, meaning that some part of their work required the acquisition *(information acquisition capability)*, processing, or dissemination *(information dissemination capability)* of information. Fourth, the sale of

the company's services, in part, required preparing written proposals, setting prices, responding to market conditions, and interacting with customers. This requirement aligned with the conceptual framework and research questions, which aimed to discover whether deficiencies in organizational knowledge or management practices associated with knowledge assets affect business performance. Fifth, each SBE targeted for this study had financial limitations. This assumption addresses cases where unlimited funds could reduce problem solving to investment decisions. Finally, study participants may have had biases about their company, the interview questions, or the study. The research design and methodological procedures minimized the impact of these potential problems.

Limitations

This section contains the limitations of this study. First, visibility into KMPs within the firm may be difficult to explore or verify entirely given the intertwined nature of personal preferences of the business leaders, informal business processes, information systems, and employee organizational behaviors. Second, focus on practices (versus theories) means that knowledge assets, which have intangible properties, require recognition and active management to create value. Thus, if managers are unaware of discrete knowledge assets within the firm, these assets will not contribute value to the company or direct management action. Third, the results obtained from qualitative case study research designs cannot reach statistical or theoretical generalization. However, using a multiple case study research design to achieve *analytical generalization* can mitigate this limitation. Finally, SBE business leaders use various internal, personal, and

intrinsic factors to make business decisions such that verification by multiple sources of evidence (Yin, 2014) may not be possible.

Delimitations

Research on the topic of knowledge management is expanding rapidly. As a result, researchers have reported conflicting results that are subject to multiple interpretations. In this study, the primary emphasis was on the KBV of the firm, with a focus on the practices used to convert data into actionable business insights around revenue generation. This study focused on exploring the KMPs of three to six service-oriented SBEs with fewer than 25 employees in the Northeastern and Mid-Atlantic states. Selecting firms that provide services aligns with the KBV of a firm, where a fundamental assumption is that organizational knowledge assets are the primary source of competitive advantage. While resource constraints compelled limiting the scope of the study, expanding the number of companies and research participants may improve the results of this study.

Significance of the Study

Small business enterprises employ 46% of all private sector workers and contributed 50% of all net new jobs during the period from 2002 through 2012 (Kobe, 2012). Reducing the failure rates of companies in this segment of the United States economy provides a strong incentive for exploring the KMPs of these organizations. The KBV of the firm is an extension of the management concepts related to the RBV. However, currently no consensus definition for the KBV of the firm exists in the literature. Contributing to the body of scholarly literature in knowledge management,

problem solving, organizational learning, decision-making, and performance effectiveness (both financial and nonfinancial) within a small business context was the primary objective of this study.

Further, business leaders might gain insights and recommendations from the results of this study about how to identify, evaluate, and manage organizational knowledge assets to complement value-creating business decisions or revenue-production. For example, the capacity of SBE managers to understand how information flows through the organization (individual, group, and enterprise wide) and where value creation, destruction, or loss occurs allows them to develop business practices that will reduce costs, improve customer responsiveness, and increase competitiveness. The results of this research may help managers in identifying knowledge gaps and expertise needed by their organizations.

The recommendations contained in Section 3 may be useful to small business service providers, governmental policy makers, consultants, and technology vendors. In addition, SBE leaders may gain insights into how to increase profitability by creating, using, and supporting the adoption of knowledge-based products into the firm. As an example, smart device applications that can collect customer data through Internet connections can offer managers insights into consumer preferences, competitor actions, and emerging business opportunities (Davenport & Prusak, 2011). This study may also provide some understanding of why some firms are better at creating and sharing knowledge than others (Powell & Snellman, 2004).

The results of this study may also help small business leaders by expanding their knowledge about the value and utility of information in two areas. First, increasing absorptive capacity can make organizational resources more productive. Second, documented and simplified business processes as well as data repositories can form the basis of competitive advantage. Finally, expanding collaboration opportunities or knowledge sharing can improve problem-solving and decision-making capabilities.

Contribution to Business Practice

Depending on the nature of the inquiry and the purpose of the study, researchers determine which research design will most effectively deliver results that will add to the body of scholarly literature. Proponents of the KBV of the firm argue that knowledge exists in a firm's culture, policies, procedures, documents, information systems, and people. This embedded characteristic of knowledge within the firm offers practitioners and theorists fertile ground for future scholarly inquiry and debate.

Most studies investigating KMPs focus on large enterprises. Large firms have enough knowledge assets to develop profitable business strategies and efficiently assign resources. Grant (1996) noted that strategy scholars confidently assert that business strategy is a mature discipline for these firms. However, because SBEs do not have access to the same quantity or quality of resources as larger firms, business strategy may have a different meaning to leaders of these companies. Despite the critical role that business information has in decision-making and problem-solving processes, limited research exists on SBEs' performance because of their KMPs.

A review of the strategy literature supports the notion that organizations should focus their resources, in part, on filling knowledge gaps (Goldman, Plack, Roche, Smith, & Turley, 2009; Lerro, Iacobone, & Schiuma, 2012; Lichtenthaler & Lichtenthaler, 2009). This study may contribute to the literature on KMPs and performance management in SBEs. This study may also contribute to the literature on the KBV of the firm for service-oriented firms within a small business setting.

Implications for Social Change

The success of SBEs is a major contributor to economic growth and employment in the global economy. In addition, around the world, entrepreneur-friendly bankruptcy laws and statutes provide legal protection, encouraging entrepreneurs to create high-risk, high-return entrepreneurial ventures by reducing the risk associated with business failure (Lee, Yamakawa, Peng, & Barney, 2011). Despite governmental support, small businesses have a high failure rate. The social cost of small business failure is high, with long-term financial, physical, and psychological effects on society.

The growth of the Internet, information technologies, and social media is creating new opportunities for entrepreneurial ventures such as SBEs. Managers of SBEs may be able to improve business performance by identifying and managing critical knowledge assets using the results of this study. Any decrease in the number of business failures (see Table 1) can positively affect local economies, communities, company-sponsored charities, stress-related illnesses, and the global economy.

A Review of the Professional and Academic Literature

In the pursuit of profits, businesses develop strategies and implement them with

the purpose of creating competitive advantages in the marketplace. While pursuing strategies to supply services to customers, different business and financial systems produce large quantities of data. Capturing and analyzing key business metrics from these systems provide the basis for executives to make value-creating business decisions. Because this information resides in multiple databases and data repositories, converting this information into actionable insights is labor intensive and requires analytical expertise (Porter, 1980). The conversion of knowledge into value-creating outputs is the essence of the KBV of the firm and the conceptual framework for this study.

Theories Related to the Conceptual Framework and the Literature Review

Management theories provide a framework to capture and predict real-world estimates of leadership in action. In the literature, recurring research themes that focus on competitive strategies, human capital management, leadership, process management practices, resource allocation, organizational behavior, and execution methods all influence the performance of a firm in a dynamic business environment. Not surprisingly, the findings of these existing studies often support, contradict, or provide alternative viewpoints to other studies within various organizational disciplines (Grant, 1996).

For example, the primary proposition of Porter's (1980) theory on competitive advantage is that by analyzing competitors, evaluating substitute products, identifying suppliers/buyers, and measuring competitive rivalry, managers can develop value-creating competitive strategies. In contrast, the resource-based view (RBV) of the firm management theory models the firm as a unique set of resources and capabilities. These

resources and capabilities, when manipulated and used by management, achieve long-term competitive advantage (Grant, 1996). Resources can be in the form of employees, policies, processes, documents, and culture. The RBV theory has four main parts that provide a basis for defining a resource: (a) valuable, (b) scarce or unique, (c) difficult to copy, and (d) nonsubstitutable (Brown, 2012; Grant, 1996; Ippolito & Zoccoli, 2010). The consolidation of resources into distinct, formalized units builds capabilities (Rapp, Trainor, & Agnihotri, 2010). However, for a resource to meet all four requirements simultaneously is impossible (Brown, 2012). The KBV of the firm (a subset of the RBV of the firm) is another management theory that postulates that expertise and knowledge creation is the most valuable asset to the firm and primary source of competitive advantage. However, no consensus definition for the knowledge-based view of the firm emerges in the literature.

Implicit in all these theories is the need to acquire, analyze, and exploit information or knowledge to realize the benefits associated with a particular theoretical management framework. Organizations acquire information to improve decision making, solve problems, develop competitive strategies, and reduce business risk by minimizing uncertainty. Efficient acquisition of strategically relevant information can help an organization improve its competitiveness and achieve higher profits (Rodrigues & Raposo, 2011). Therefore, the KBV of the firm is a reasonable theoretical lens for exploring the KMPs of SBEs given the difficulties of acquiring market data to perform a comprehensive competitive analysis using Porter's (1980) five forces or assessing the resources of the participant companies using Brown's (2012) criteria.

Focus of the Literature Review

The research objective is to explore the critical capabilities SBE leaders need to detect or determine when underperformance in revenue-generation occurs because of gaps in organizational knowledge or business practices when managing knowledge assets. This literature review highlights the key themes identified in the literature related to the conceptual framework, the problem statement, and the key research questions. This section covers concepts, definitions, ideas, relationships, and characteristics related to how knowledge assets and knowledge management practices affect the business performance of an SBE. The sources of data for the literature review included (a) peer-reviewed scientific research articles, (b) case studies, (c) government publications, and (d) theory-based books written by subject matter experts. The research for this literature review focused on the following categories: (a) the characteristics, value, and utility of knowledge; (b) knowledge management; (c) absorptive capacity; (d) organizational learning; (e) business processes; (f) information processing; (g) strategic decision-making, and (h) performance management. These categories aligned with the main themes presented in the conceptual framework and guided developing research questions.

Researchers have explored these topics in different business contexts that provide insights commonly linked to resource management, organizational learning, information processing, and performance management. Therefore, awareness of the importance of managing knowledge is essential to understanding KMPs in organizations.

The Characteristics, Value, and Utility of Knowledge

We live in a connected world enabled by modern communications systems such

as the Internet, social networking, and media platforms; the use of which produces large quantities of data gathered from markets, supply chains, customer relationship, and financial management systems. Assets based on knowledge are a key resource, and the capacity to create, acquire, interpret, and assimilate knowledge *(assimilation capacity)* is essential to creating sustainable competitive advantage (Jiménez-Barrionuevo et al., 2011).

In the literature, no universal definition of knowledge exists. Therefore, the interchangeable use of the terms *knowledge* and *information* in practice and academic journals is common; however, differences exist between their meanings. Davenport and Prusak's (2011) research supports the hypothesis that converting data to information occurs through five processes:

1. Condensation—the reduction of data into smaller units with redundant and unnecessary units removed.
2. Contextualization—the collection of data for a known purpose.
3. Calculation—the processing and combination of data to provide valuable information.
4. Categorization—the assignment of data collected to unique group(s).
5. Correction—the refinement of data with erroneous units discarded.

Tseng (2012) described the difference between knowledge and information using a knowledge value chain. The first difference focuses on a hierarchical structure or value chain approach consisting of data, information, and knowledge. The second point of differentiation dissects knowledge into four stages: (a) creation, (b) storage, (c)

distribution, and (d) application. In addition, Tseng noted that knowledge-based decisions do not depend on intuition or opinion because such approaches are difficult to reproduce reliably.

Knowledge and all its qualities are part of a complex phenomenon. Davenport and Prusak (2011) characterized knowledge as a combination of experiences, information, values, and personal insights that form the motivation to acquire, interpret, and synthesize information. Kamhawi (2010) defined knowledge as the processes of comprehension, understanding, and learning that take place only in the mind *(knowledge object)*, which alludes to a human quality distinguishable from the qualities of machines or artificial intelligence. Jiménez-Barrionuevo et al. (2011) noted that knowledge has multiple properties depending on the context, rooted in the epistemological distinction between tacit versus explicit, subjective versus objective, personal versus organizational, and procedural versus declarative knowledge. Giju et al. (2010) portrayed knowledge as being formed when people combine what they know with information available to them residing in organizational processes, services, facilities, and systems. While knowledge is essential for problem solving, only people can experience the value of knowledge.

Knowledge, in the form of language, symbols, behaviors, and patterns, has properties created through interactions between individuals, between individuals in an organization, and between individuals and the environment. Knowledge may also have contextual properties where time, space, and interrelationships are key factors. Transforming information into personal knowledge occurs when acceptance, retention, and compression of data represents a valid version of reality (Giju et al., 2010).

Converting personal knowledge into organizational knowledge happens (a) when a consensus of people accept the knowledge, (b) when the organization benefits from application, and (c) when the knowledge allows for the discovery of higher order concepts such as insight (Davenport & Prusak, 2011; Giju et al., 2010).

Davenport (2007) built an elaborate diagram to show the types of knowledge; the vertical axis distinguishes between individual and collaborative knowledge, and the horizontal axis makes a distinction between routine knowledge and complex forms of knowledge such as interpretation and judgment. Based on these axes, Davenport identified eight clusters of knowledge within four quadrants—(a) the transaction model, (b) the expert model, (c) the integration model, and (d) the collaboration model—as shown in Figure 1.

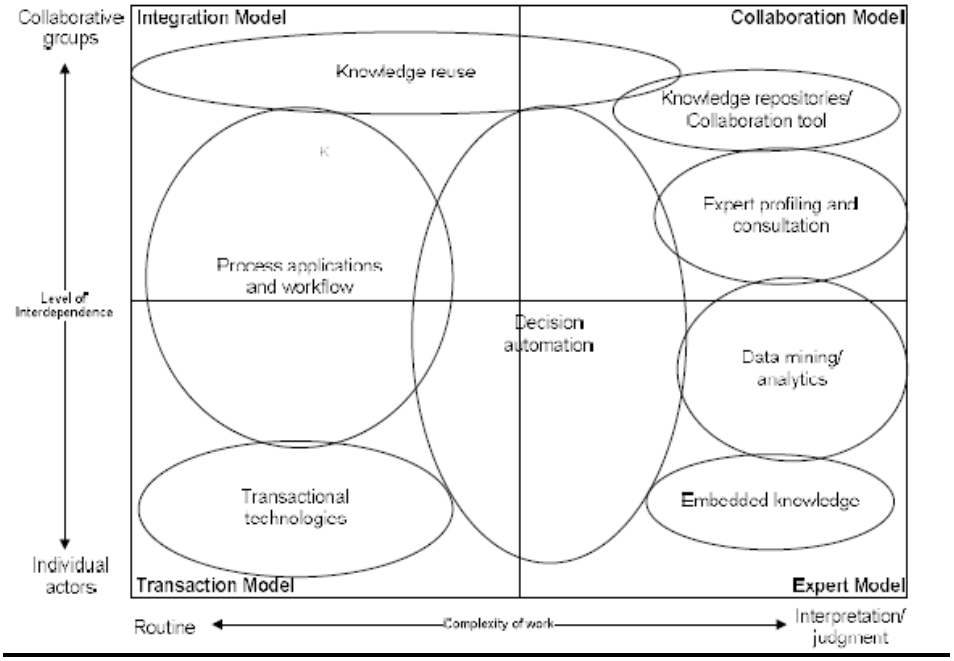

Figure 1. Types of knowledge. From *Knowledge Creation and Management: New Challenges for Managers*, by K. Ichijo and I. Nonaka (Eds.), 2007, New York, NY: Oxford University Press. Copyright 2007 by Oxford University Press. Reprinted with permission.

Knowledge Management

Knowledge management is essential to a company because the expertise of employees represents the tacit knowledge of the company and is a building block of organizational core competencies (Oh, 2010). Swift (2012) noted that complex knowledge is often a valuable, unique company asset that is hard to copy. Complex knowledge applied in an environment with a high degree of trust between organizational actors supports creating competitive advantage through knowledge transfer. Knowledge transfer is the essence of the KBV of the firm. While knowledge management can help companies gain competitive advantage, is not about managing knowledge intrinsically, but rather about managing and creating a knowledge-sharing culture (Kukko, 2013).

A knowledge management system consists of (a) knowledge creation, (b) knowledge use, (c) knowledge transfer, (d) information coding, and (e) storage (López-Nicolás & Meroño-Cerdán, 2011). Huggins and Weir (2012) found that knowledge transfer was the most critical part of a knowledge management system. In contrast, Spraggon and Bodolica (2012) viewed knowledge as a by-product of individuals in a social network who interact across different capacities of knowledge generation, absorption, dissemination, and adoption.

Wu, Senoo, and Magnier-Watanabe (2010) extended the socialization, externalization, combination, and internalization (SECI) model developed by Nonanka and Takeuchi as a tool to diagnose knowledge creation in organizations. The SECI model (Figure 2) consists of four circular stages with no particular starting or end point (Curado & Bontis, 2011; Wu et al., 2010). The *socialization* quadrant displays how individuals share tacit knowledge through personal experiences and interaction with other individuals. In the next quadrant, *externalization*, converting tacit knowledge to explicit knowledge occurs through articulation, dialog, and reflection. The third stage, called *combination*, brings explicit knowledge from different groups within an organization together to create new meaning by knowledge synthesis. Last, *internalization* is the point at which individuals transform explicit knowledge into their tacit knowledge through learning and applying knowledge.

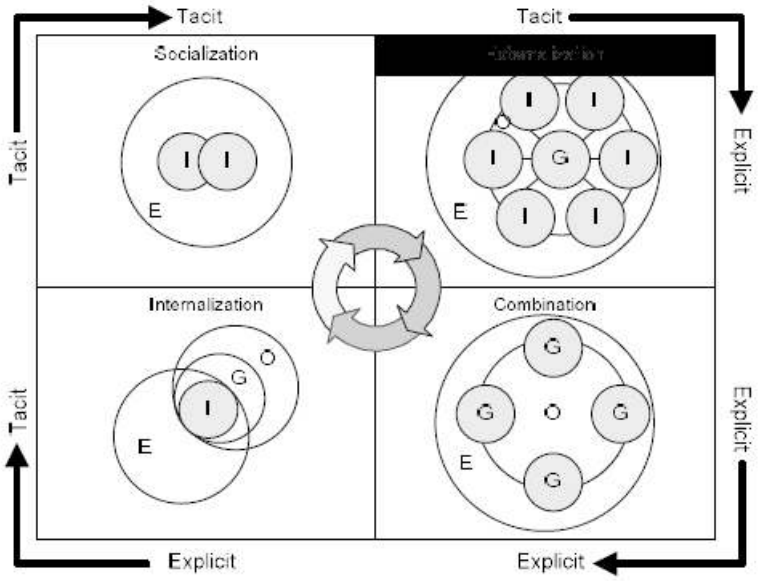

Figure 2. The SECI model knowledge creation process. Legend: I = individual, G = group, O = organization, E = environment. From *Managing Flow: A Process Theory of the Knowledge-Based Firm*, by I. Nonaka, R. Toyama, and T. Hirata, 2008, New York, NY: Palgrave MacMillian. Copyright 2008 by Palgrave MacMillian. Reprinted with permission.

López-Nicolás and Meroño-Cerdán (2011) argued that socialization and codification are necessary to leverage critical knowledge. These researchers found four conditions necessary for effective knowledge management: (a) managers are visible knowledge activists, (b) the work culture is participative with equal opportunities, (c) there is global equality irrespective of competency gaps, and (d) there is an inclusive culture that highlights a sense of connectedness and mutual respect *(participatory management).*

Thus far, the focus has been on the knowledge management process. The research by Bloodgood and Chilton (2012) concentrated on the knowledge itself and stated that knowledge is not a single, monolithic idea. In their view, different types of

knowledge, each influenced by different cognitive styles and properties, can affect performance, action, and even competitive advantage. For example, Bloodgood and Chilton's findings revealed that individuals with adaptor cognitive styles perform better in environments where explicit knowledge is dominant and performance improves for teams with innovator cognitive styles in an organizational setting where tacit knowledge is dominant. Understanding the differences is essential in an organizational context, especially in a multicultural environment where conflicts and uncertainties can arise.

Multiple models and conceptual frameworks exist that describe knowledge management processes in organizations (Schiuma, Carlucci, & Lerro, 2012; Supyuenyong & Swierczek, 2011). The individual, group, organizational, and environmental levels are where KMPs occur. The key conclusions contained in this section are as follows: Knowledge transfer is an essential part of knowledge management (Huggins & Weir, 2012), and creating a knowledge-sharing culture is an enabler of successfully managing knowledge in an organization (Kukko, 2013).

Absorptive Capacity

Absorptive capacity, while extensively researched, has no consensus definition in the literature. Since the early 1990s, studies have expanded on the theoretical underpinnings of absorptive capacity. However, no valid and reliable instruments exist to measure absorptive capacity (Lichtenthaler & Lichtenthaler, 2009; Qian & Acs, 2011). Jiménez-Barrionuevo et al. (2011) defined absorptive capacity as organizational routines and processes used to acquire, understand, convert, and apply knowledge to create value. Tseng, Pai, and Hung (2011) characterized absorptive capacity as an organization's

ability to combine internal capabilities with external knowledge assets. A secondary property of absorptive capacity is the *exploitation capacity* of the firm.

Investments in knowledge assets can produce economic growth by improving organizational efficiency and making assets more productive. Economic growth also results indirectly from knowledge outflows from the firm (Braunerhjelm, Acs, Audretsch, & Carlsson, 2010; Qian & Acs, 2011). St-Pierre and Audet (2011) examined what managers of growing small businesses needed to reach the next phase of growth and found that they ignored or did not consider the value of intangible assets.

Intangible assets from an accounting perspective are difficult to measure, but nonetheless are essential resources. The value created from assets (tangible and intangible) is consistent with the RBV (Grant, 1996). Interestingly, the intangible properties of absorptive capacity, while difficult to quantify, is also challenging to copy (Cohen & Levinthal, 1990; Jiménez-Barrionuevo et al., 2011; Sun & Anderson, 2010). In addition, because the benefits associated with absorptive capacity are mostly indirect; managers have difficulty determining the optimal investment in intangible resources.

Increasing absorptive capacity in a firm is achievable in several ways, but is usually a resource allocation decision. For example, absorptive capacity increases occur as a derivative or side effect of organizational manufacturing expertise. Firms can also enhance their absorptive capacity by sending employees to specialized training programs. However, the act of directly exposing employees to new knowledge from training is inadequate to increase absorptive capacity of the organization. Cohen and Levinthal (1990) commented that absorptive capacity is a function of investment in employee

development (individual absorptive capacity) and will grow over time. However, the effect is not linear because not all benefits associated with employee development or training investments transfer to the firm.

Absorptive capacity when viewed through a communication or collaboration lens focuses on information pathways between the firm and the environment and the internal communication pathways between departments (Curado & Bontis, 2011; Millar & Choi, 2010; Wynarczyk, Piperopoulos, & McAdam, 2013). Focusing on the communication pathways allows firms to capture the spillover benefits of collaboration as part of the innovation process and the commercialization of ideas and technologies. The second viewpoint concentrates on the dispersal of expertise inside the firm (Cohen & Levinthal, 1990). From a collaboration lens, gatekeepers or individuals in specialist positions may become a factor limiting organizational absorptive capacity depending on the efficiency of communication between actors. As an example, the gatekeeper may have information to transfer or share with an individual in a specialist role. The effectiveness of communication in organizations depends on the complexity of information shared and the absorptive capacity of the different actors involved. If the variation between absorptive capacities between internal-to-internal or internal-to-external communication pathways is too large, the ability of employees within internal business units to identify, understand, and commercialize knowledge may degrade. This degradation is because of inefficient knowledge transfer or sharing (Cohen & Levinthal, 1990; Ippolito & Zoccoli, 2010).

Equally noteworthy are the methods used to expand absorptive capacity: (a) developed internally through training, (b) purchased through business acquisition, or (c)

outsourced using consultants as a solution to closing absorptive capacity gaps. The absorptive capacity gap is a serious issue for SBEs. Resource constraints may limit an SBE's ability to hire qualified employees or consultants who have high absorptive capacities. However, when the absorptive capacity of the firm is not increasing, lost business opportunities occur because of the diminished capacity to identify and capitalize on emerging trends in the marketplace (Cohen & Levinthal, 1990; Ippolito & Zoccoli, 2010). Jiménez-Barrionuevo et al. (2011) referred to this phenomenon as a competitive gap. This gap restricts firms to specific technological areas where firms with high absorptive capacities are actively exploiting market opportunities. In contrast, firms with low absorptive capacities are reactive and may experience performance issues such as loss of market share or reduced profitability. Despite these different definitions, most explanations recognize absorptive capacity contains (a) a problem-solving component, (b) a learning component, and (c) an information-processing component.

Problem solving. I explored the KMPs of SBEs through a problem-solving lens as a basis to explore how SBEs use knowledge assets to create value or develop competitive advantages. Akgün et al. (2007) described the problem-solving skills of the owner-manager as a core management capability. In addition, a connection exists between the owner-manager's ability to solve problems and business survival. However, Jablokow, Jablokow, and Seasock (2010) noted no single universal problem-solving method or technique exists; rather, the best problem-solving approach depends on the nature of the problem.

The problem-solving model developed by Jablokow et al. (2010) consisted of the following components (a) the person, (b) the process, (c) the product or result, and (d) the environment. Because some problems can be complex and dynamic in nature, another significant part of problem solving is communication and using a common language among participants. Using a common language can reduce ambiguity, foster knowledge transfer, and build trust (Akgün et al., 2007; Stahl, Larsson, Kremershof, & Sitkin, 2011). Jablokow et al. observed for actors to solve a problem competently requires motivated problem solvers with the necessary cognitive abilities, and can implement a problem solving technique (individually or in groups) specific to the problem.

Cohen and Levinthal (1990) argued the underlying methods of problem solving and learning are similar and differ only in the method of knowledge creation. The authors argued that problem solving focuses on the skills needed to create knowledge whereas learning centers on the ability to absorb knowledge. A major misconception about problem-solving and management practices in large organizations is the same principles apply to small business environments. However, a significant amount of research in the literature supports major differences in management style, processes, skills, competencies, and other contextual factors between large and small organizations (Giroux, 2009). For example, large firms use process-oriented frameworks to solve problems, but such approaches may not be suitable in environments that are flexible or where managers use intuition based problem-solving methods commonly used in small business environments (Giroux, 2009). However, the lack of a well-understood problem-solving process is a large obstacle for everyone engaging in the process, especially if the

problem is complex (Jablokow et al., 2010).

The cognitive abilities of employees, internal business processes, the organizational culture, and problems faced by SBE leaders are part of a complex system of interactions. Therefore, conducting exploratory research to achieve a deeper understanding of the problem-solving capabilities of SBEs in practice was valuable. In addition, the management practices of SBEs require exploration to extract the rich data needed to understand the complex links between knowledge assets and business performance.

Sense-making. To understand barriers that impede implementing effective KMPs, examining applying sense-making to ambiguous situations in organizations is useful. In the act of solving a problem, understanding the problem must occur before the process can begin. In the review of the literature, the characteristics of various ambiguous situations emerged:

1. Nature of the problem is in question.
2. Information (amount and reliability) is problematic.
3. Conflicting interpretations existed.
4. The presence of different value orientations, political, emotional, and clashes coupled with unclear goals.
5. Time, money, or attention is lacking.
6. Contradictions and paradoxes exist.
7. Job duties are vague and responsibilities are unclear.
8. Success measures are lacking.

9. Knowledge of cause and effect relationships is inadequate or unknown.
10. Discussions contain frequent use of symbols and metaphors.
11. Participation in decision-making is fluid (Baillon, Cabantous, & Wakker, 2012; Jørgensen, Jordan, & Mitterhofer, 2012; Thiel, Bagdasarov, Harkrider, Johnson, & Mumford, 2012).

Ndubisi (2012) framed sense-making by how an actor thinks (mindfulness), gathers information, senses the environment around them, and their openness to changing their perspective a situation in real-time. Mindfulness includes ideas and attitudes such as flexibility, alertness, sensitivity, awareness, and orientation to a current event that may require a decision or response. Maitlis and Christianson (2014) described sense-making as the process through which individuals expend effort to understand issues or events that are innovative, ambiguous, unclear, or somehow different from their expectations. Therefore, sense-making applied to various situations builds on the interpretation, rationalization, explanation, and understanding of past events and situations.

Employees and leaders apply sense-making in ambiguous situations because of confusion by the number possible interpretations (Jørgensen et al., 2012; Thiel et al., 2012). Organizational ambiguity results from a continuing flow of ambiguous information and poorly defined problems that promotes different interpretations simultaneously (Jørgensen et al., 2012; Thiel et al., 2012). In such situations, more information may not resolve misunderstandings.

Neisser (1976) developed a dynamic learning model that describes the learning process as a perceptual cycle. The model hypothesizes that as an individual learns more

about the environment, his or her fit with the environment changes, and the affordances (possible actions) available change (see Figure 3). As a result, new and improved approaches replace conventional methods and outdated information. Neisser's perceptual cycle describes various types of environmental fit and knowledge agents (user, technology-as-tool, technology-as-representation).

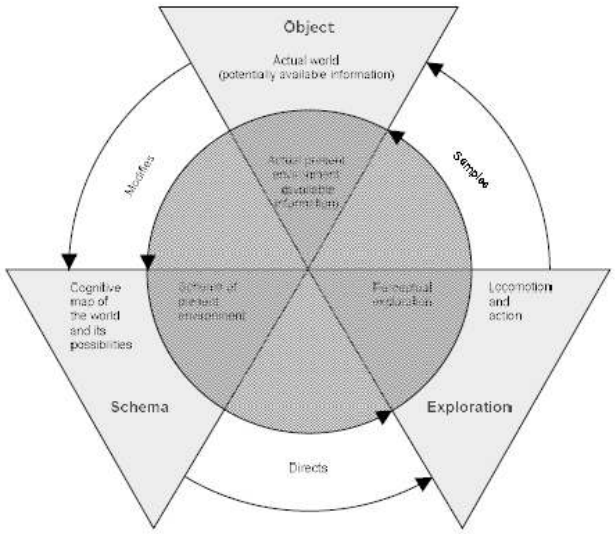

Figure 3. Neisser's perceptual cycle. From *Principles and Implications of Cognitive Psychology*, by U. Neisser, 1976, San Francisco, CA: W. H. Freeman. Copyright 1976 by P. Neisser. Reprinted with permission.

Thiel et al. (2012) framed sense making through an ethical decision-making lens using eight sense-making properties related to organizational problem-solving activities and information processing:

1. Discovery of thinking influences identity because thinking is not obvious to others; identification is difficult to determine.
2. Reflection on stated positions helps to understand thought processes, even though words are audible, interpretation of words can vary widely.

3. Doing and speaking creates objects for inspection that may create misunderstandings because the history and the motives behind the objects may be unknown.
4. The socialization process and audience composition will affect information presented and excluded. Companies have different social cultures with various social behaviors, which can create misjudgments and misunderstandings.
5. Interests can change over time. Observable objects may represent outdated interests.
6. Analysis cannot occur in isolation without considering the context, objects, or cues.
7. Hearing and analyzing what people are saying is valuable; however, analysis when done properly requires focusing on the person as a whole.
8. People need to know what the audience thinks to be effective. First, people want to establish credibility before they can move on to accuracy.

Sense making is a vital part of problem solving at the individual, group, or organization level. Through sense making, people develop an understanding of the problem and create ideas leading to a solution. Developing strategies for solving problems is complex and influenced by absorptive capacity, information processing, the work environment, and cultural factors.

Information Processing

When decisions to acquire new knowledge or use information outside the

organization (collectively, meaning expertise), the company must allocate resources to expand its absorptive capacity (Cohen & Levinthal, 1990). A simplified view of the purpose of the firm is to process information and solve problems in a dynamic environment. Li et al. (2009) examined how knowledge management systems can improve knowledge access and increase organizational learning. The findings of Li et al. (2009) revealed the working environment is an essential factor for workplace learning and creating an effective learning environment is a shared responsibility of the entire organization. Therefore, to achieve maximum benefit, all levels of the organization need alignment.

Several studies in the literature, examined the process and reasons individuals accept or reject information using *information cues* (Cohen & Levinthal, 1990; Rerup & Feldman, 2011). Akgün et al. (2007) depicted information processing as a vital organizational capability. Maitlis, Vogus, and Lawrence (2013) researched how emotional factors such as fear, especially if allowed to permeate the organization, can limit awareness, concentration, attention to details, and decision-making. Savolainen (2009) described information processing as acts, mental or physical that combines new information with an individual's current knowledge base. Lallement (2010) found that individuals, when confronted with difficult choices, selectively rejected information that did not meet their minimum understanding as a time saving mechanism. Glöckner and Betsch (2012) discussed strategies to process and filter information such as pattern recognition and memory prompting. Visual content and social interactions activate these strategies to enable decision-making with less effort. Kaynak and Carr (2012) noted that

information processing is an activity by which organizational units acquire, analyze, and exchange information to respond to environmental uncertainty or reduce costs. Collectively, these authors support the notion that because humans have cognitive limits, which constrain rationality and recall behaviors; members of an organization often make personally satisfying decisions by performing selective heuristic searches that support their personal aspirations or goals. However, in cases where time pressure is a factor, the practice of selectively processing information can lead to changes in decision-making strategies in order to accommodate the intensity of the time pressure (Lallement, 2010).

In business environments, knowledge and data quality are essential inputs into problem-solving and decision-making processes (Nickerson & Zenger, 2004). Decision-making and problem solving are fundamental processes in SBEs; therefore, distinguishing between information uncertainty and information ambiguity is necessary. Uncertainty is a problem grounded in a lack of information and solved by increasing communication. Employees need information richness, defined as the ability of an individual to achieve understanding within a time interval to reduce ambiguity (Jørgensen et al., 2012). Uncertainty and ambiguity can appear in different combinations, and each combination requires different interventions.

Beleska-Spasova and Glaister (2013) surveyed 356 business managers to research the relationship between *causal ambiguity* and financial performance. The findings of their study confirmed the presence of an adverse relationship between ambiguity and business performance. While Kukko (2013) noted when causal ambiguity is high, common in high technology environments; the overall effect on the firm can become

negative. The existence of contradictory research studies underscores the need for further study of the impact of information processing on firm performance. However, trustworthiness and trust mediates this effect and improves knowledge transfer (Pinjani & Palvia, 2013). In addition to general causal ambiguity, causal ambiguity of technology can be relevant to SBEs. Although causal ambiguity of technology protects a company's technological capabilities from imitation, it also impedes diffusing technical competencies and knowledge transfer in the organization (Chen, 2012).

Information uncertainty can lead to information ambiguity, which can affect performance, expectations, results, goals, and the overall collaborative potential of the company (Buono & Jamieson, 2010). Baillon, Cabantous, and Wakker (2012) stated that employees' performing in an environment with a high information ambiguity causes organizational responses such as pessimism (desire to avoid ambiguity) or insensitivity (unwillingness to differentiate between different levels of ambiguity). Baillon et al. modeled three forms of ambiguity in their study: (a) agreement, (b) conflict, and (c) imprecision where agents provide a decision maker with inexact or ill-defined probability judgments about risk scenarios.

However, reducing uncertainty and ambiguity has costs. The goal of knowledge management is to optimize the performance payoff by making the right business choices while minimizing costs to acquire and process information, more commonly known as the *coordination cost of information processing*. Kaynak and Carr (2012) noted the cost of information processing decreases when information is readily accessible by reducing the cost of gathering and analyzing information from multiple sources. How employees

at various levels within an organization process new information, whether for creating new knowledge, information storage, retrieval, reuse, or transfer is a critical factor for SBE leaders. Individual, group, and organizational motivations impose economic limits and constraints to (a) reduce uncertainty in information collection, (b) reduce costs associated with time constraints, and (c) reduce information ambiguity.

Organizational Learning

Organizational learning is a by-product of knowledge management and knowledge transfer. Managers may establish a strategic goal of becoming a learning organization; however, implementation has been difficult because no universal definition for a learning organization exists in the literature (Sun & Anderson, 2010). Although many organizations encourage employees to take advantage of continuing education opportunities, Fiedler and Welpe (2010) noted that continual employee learning or more broadly, organizational learning is not sufficient to affect financial performance. However, knowledge captured and integrated into information repositories, business processes, practices, and shared throughout the organization; promotes value creation. Organizational memory is a fundamental part of organizational learning (Fiedler & Welpe, 2010). In their view, learning occurs on knowledge storage or retrieval.

Organizational learning is a consequence of the tension between assimilation of new knowledge and reusing existing knowledge, both at the individual and group levels (Curado & Bontis, 2011; Sharabati et al., 2010; Sun & Anderson, 2010). When individuals increase their absorptive capacity, the learning capability of the organization improves; provided the organizational culture support and rewards knowledge sharing.

However, various organizational issues such as a lack of trust among organizational actors make organizational learning more difficult (Stahl et al., 2011).

Organizational learning process. Wang, Wang, and Horng (2010) defined organizational learning as a process of reinforcing the capacity of the learner, individually or collectively, to acquire, interpret, and create knowledge. Hedberg (1981) created a cycle of organizational learning that has four phases: (a) personal beliefs, (b) individual action, (c) organizational action, and (d) environmental response. An individual's beliefs affect their own actions, which collectively affect the operation of the organization, which triggers an environmental response. The model is a cycle; as a result, the environmental response will eventually affect the individual's belief system, and the cycle will start again. Some processes hamper learning locally because of differences and misunderstandings in the information flow between individuals, groups, or departments within a company (Bresman, Birkinshaw, & Nobel, 2010).

High-technology firms have started to use a new model called 4I to examine interorganizational learning. The model has four phases: intuiting, interpreting, integrating, and institutionalizing, which links individuals, groups, and organizational levels together (Sun & Anderson, 2010). As stated in the section on knowledge management, a process is only as effective as the organizational culture allows, especially for learning and knowledge sharing (Kukko, 2013).

Learning factors. After reviewing the organizational learning process, evaluating the factors that influence organizational learning is beneficial (Figure 4).

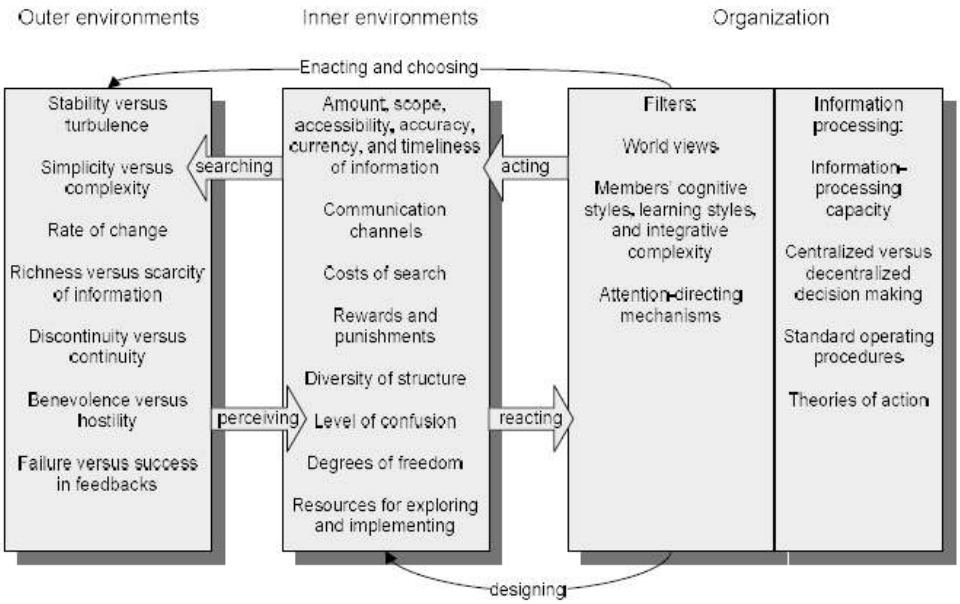

Figure 4. Influential factors that affect organizational learning. From *Handbook of Organizational Design* (pp. 3-27), by B. Hedberg, 1981, New York, NY: Oxford University Press. Copyright 1981 by Oxford University Press. Reprinted with permission.

The information processing and filters in Hedberg's model are influential in an organization because of the large amounts of complex and ambiguous information frequently created. Jørgensen et al. (2012) expanded the research of Karl Weick to identify ways people try to understand events by (a) creating order, (b) triangulation, (c) affiliation, (d) communication, and (e) consolidation. While learning is essential, equally noteworthy is the need to unlearn old irrelevant information. The boundaries and limitations section covers the importance of unlearning and changing routine behaviors. As the information load increases, people start with omission, followed by accepting a greater amount of error through queuing, filtering, abstracting, escaping, and ending with chunking (Jørgensen et al., 2012; Thiel et al., 2012).

Goldman et al. (2009) researched how, when, and why emergency medicine

residents learn in a chaotic hospital emergency room setting. Contextual factors such as social forces, demographics, globalization, technology, and environment affect adult learning at the training site. Learning sites exist in various forms: formal, informal, virtual, and actual. The authors also stated external reasons such as industry competitiveness could affect workplace learning. Goldman et al. focused on situational learning, chaos theory, and emergency medicine. The authors used a semistructured interview protocol in a qualitative study, which included 6 emergency medicine year 1 residents, 4 emergency medicine year 2 residents, and 2 emergency medicine year 3 residents. The findings of Goldman et al. identified four types of learning settings: (a) participation in the environment, (b) focused learning moments, (c) repetitive cycles, and (d) intensive experiences. Each learning setting has different facilitating factors associated with intensity, duration, degree of motivation, and self-direction of the learner.

Acquiring business expertise is a combination of skills, collaboration, and knowledge (Danis & Shipilov, 2012; Siewiorek, Saarinen, Lainema, & Lehtinen, 2012). These researchers used game simulations: (a) to simplify complexity, (b) provide study participants with real-life problems, and (c) highlight cause-and-effect connections. Simulations also mimic the dynamic nature and time pressure experienced in a business environment. The authors identified six elements that increase acquiring knowledge: (a) empowerment, (b) learning by doing, (c) authenticity, (d) intensity, (e) complexity, and (f) shared experience. The study participants reported most of their learning centered on gaining a 360-degree view of organizational dynamics and the impact on decision-making. The authors conceded difficulty in quantifying what study participants learned

from the simulation and recommended that a longitudinal study would be a logical next step. Simulations are artificial environments where participants have time to evaluate individual decisions and have the benefit of using past decisions as a foundation for future actions. However, in dangerous environments life-and-death decisions require instantaneous reactions.

Business Processes

A business process is a series of steps used to create a particular outcome. Each step is part of a sequential procedure that consists of an input, an output, and a processing component. Processes are managed using a variety of methods and can be manual or automated. However, processes linked to organizational knowledge are difficult to administer due to the intangible properties associated with knowledge creation and transfer (Nag & Gioia, 2012).

Wu et al. (2010) found the formality of a firm's social network at individual, group, and organizational clusters are relevant for knowledge creation and management. For example, employees reluctant to disclose problems or a preference for covering up problems can hinder knowledge sharing. Instead of spreading information throughout the organization, individuals prefer to keep information private or within a division. Therefore, cultural considerations and social networks in the workplace moderate barriers to efficient knowledge transfer and increase the likelihood of managing organizational knowledge assets (Millar & Choi, 2010).

In geographically decentralized business, every subsidiary may have unique values and distinctive relationships linking the subsidiary to external partners, customers,

or suppliers (Millar & Choi, 2010). Harvesting this unique knowledge to find new opportunities is critical, especially in organizational expansions. When subsidiaries are young, more knowledge flows from the headquarters to the subsidiary; over time and contingent on the strategic context of the subsidiary, the ratio changes (Millar & Choi, 2010). However, valuable local knowledge may flow back to the headquarters when employees have specific experiences or have superior context related information. Therefore, what works well in one subsidiary might not work in another because language, native origin, or distance increases the difficulties for managing knowledge effectively.

One emergent problem is how to evaluate, educate, encourage participation, and integrate employees from different departments in remote or virtual environments (Curado & Bontis, 2011; Rasmussen & Nielsen, 2011). According to the International Data Corporation (IDC) study conducted by Cook, Jaffe, Boggs, and Drake (2011), telecommuting will grow to 1.3 billion people by 2015. However, little empirical research about knowledge transfer in global virtual teams and communities of practice is available (Kirkman, Mathieu, Cordery, Rosen, & Kukenberger, 2011; Pinjani & Palvia, 2013).

Strategic Decision Making

A critical performance factor for small businesses is the quality of its strategic and operational decision-making. Decision-making in small firms rely on the skills and knowledge of employees, which may not be sufficient for the needs of the business (Li, Zhu, & Pan, 2010). However, one challenge with defining the act of decision-making is

the diverse set of definitions. Li et al. described decision-making as finding a path to the expected objective or goal. Grigorak and Shkvar (2011) depicted decision-making as a cognitive process leading to selecting a series of actions chosen from several alternatives. As an alignment principle in this section, the emphasis is on strategic decisions that produce competitive advantages, increase the value of the firm, improve the firm's ability to serve customers, or increase market share.

Measuring business performance is a useful tool for assessing the strategic decision-making success of leadership within the organization. Quantitative research by several scholars found a significant relationship between effective decision-making and business performance (Jansen et al., 2011; Liberman-Yaconi et al., 2010). Further, research by Elbanna and Naguib (2009) discovered a high correlation between organizational effectiveness and strategic decision-making that was stronger than the link between strategic decision-making and business performance. These factors make examining strategic decision-making a key research objective of exploring the KMPs of SBEs.

Notably, the decision-making process is complex because each actor has personal biases, preferences, and judgments about the information provided; decisions are subject to wide variation even when based on the same data inputs. Over the course of many business cycles, these value-creating decisions may form the basis for competitive advantage. However, complicating the decision-making process is access to data, the timeliness of the information, and the validity of information provided to business executives from databases, transactional records, customer management systems, and

members of the organization.

A review of the literature uncovered a broad range of decision-making theories grounded in psychology, sociology, economics, strategic management, information systems, and organizational behavior. Detailed in the next section are the key themes that emerged from the literature and related to decision-making.

Contextual factors. This section is not an exhaustive review of all the theories relevant to strategic decision-making, but rather a *purposeful sample* of different theories that may have applicability to this study. Prominent theories on decision-making in the literature cover diverse scientific fields:

1. Theory of competitive advantage of the firm using five forces (Porter, 1980).
2. Chaos theory, decisions in dynamic environments (Goldman et al., 2009).
3. Normalization of deviance theory, offers an explanation about how leaders redefine extraordinary results as ordinary and use past results as the unknowing basis for riskier decisions in the future (Maitlis, Vogus, & Lawrence, 2013).
4. Enactment theory describes a process in organizations where rationalization or justification occurs after the decision (Jørgensen et al., 2012).
5. Fuzzy set theory, which provides a framework to visualize decision-making processes when dealing with ill-defined, imprecise or vaguely specified problems, commonly found in a competitive business environment (Zohouri, Zowghland, & Haghighi, 2011).

Multiple points of overlap, integration, and possible contradictions exist between

different decision-making and problem solving theories. As a key research objective of this study, these theories will guide developing research questions to explore the act of decision-making and problem solving in the participant organizations in different business and competitive settings.

Taxonomy. In the literature, researchers examined decision-making frameworks using quantitative, qualitative, or mixed research designs. Hacklin and Wallnöfer (2012) framed strategic decisions by value creation and social dynamics. Dimitratos, Petrou, Plakoyiannaki, and Johnson (2011) offered a slightly different perspective on classifying decision-making models; namely, rational, intuitive, and improvisational. Gigerenzer and Gaissmaier (2011) separated decision-making into *large worlds* and *small worlds*. Jansen et al. (2011) added another perspective to the decision-making process by focusing on social capital as a central resource in service organizations.

Logical decision-making models include, but not limited to (a) evidence collection, (b) multiple evaluation methods using numerical or subjective weights, (c) heuristics (Gigerenzer & Gaissmaier, 2011; Li et al., 2010), (d) economics, game theory, and simulations (Li et al., 2010), (e) data mining (Li et al., 2010), and (f) cognitive theory (Akgün et al., 2007). Examples of innovative, intuitive, or improvisational decision-making approaches use (a) mindful judgment (Nickerson & Zenger, 2004); (b) inferences, preferences, and recognition (Gigerenzer & Gaissmaier, 2011); (c) knowledge seeding (Li, 2010); (d) participatory, group, or consensus (Hacklin & Wallnöfer, 2012); and (e) experiential learning (Goldman et al., 2009).

Although grounded in mature disciplines, the debate continues among scholars

about decision maker motivations, which may violate basic assumptions that underpin particular decision-making frameworks. For example, Nickerson and Zenger (2004) argued decision makers might have social connections that bias their decisions or limit employees from seeking new sources of knowledge if they fall outside preexisting patterns of information acquisition. Jansen et al. (2011) contended that humans make decisions based upon the perceived level of risk and the degree of confidence they have relative to the decision context. Gigerenzer and Gaissmaier (2011) asserted by using heuristics, the decision-making process is faster and more accurate than methods that are more complex.

These diverse, contradictory, and evolving research based perspectives on strategic decision-making creates doubt that current management theories individually may not adequately capture the complexity of decision-making within organizations. Although, each theory has the potential to improve decision-making within SBEs, review of the literature uncovered several gaps related to SBEs. First, some of these decision approaches may be difficult for SBEs to use because of procedural or analytical complexity. Li et al. (2010) findings supported the implementation difficulties for SBEs by identifying the shortage of skilled employees knowledgeable of or trained in decision-making methods. In addition, underdeveloped decision support structures are another noteworthy consideration. Second, according to Gigerenzer and Gaissmaier (2011), much of the empirical research and data collection on decision-making are from the experience(s) of large companies. The applicability of each decision framework in a small business environment is unclear. Third, the literature contains a broad range of

decision-making theories. However, limited research exists on the interrelationships between organizational capabilities, information inputs, management tools, business processes, and leadership behaviors that may affect decision-making frameworks in practice. For example, how would the political environment or organizational culture strengthen or diminish the efficacy of a rational decision-making framework? These gaps provide additional areas to explore to gain a better understanding of managerial decision-making individually, in groups, and in their organizations.

Linkage. Decision-making encompasses a wide range of disciplines to communicate and fulfill business objectives using organizational resources. As a result, decision-making within an organizational setting is not a singular, independent activity. The extent to which managers employ a particular decision-making approach depends on various contextual factors (industry, resources, capabilities, and leader characteristics), information availability, and the technological infrastructure of the company (Moses, 2011). For instance, the findings of Jiménez-Rodríguez (2012) show performance gains occur as a byproduct of investments in technology. Rodrigues and Raposo (2011) surveyed 1,530 small and medium-sized firms and found a correlation between organizational commitment to employees and business performance. Zhang and Zhang (2012) found owners with an entrepreneurial orientation achieved improved business performance. Liberman-Yaconi et al. (2010) studied decision-making by small business leaders, but recognized that knowledge acquisition and information processing capacity were topics requiring further research.

In addition, a relationship exists between decision-making and outsourcing,

information technology responsiveness, social connections, absorptive capacity, resources, and organizational effectiveness (Bustinza et al., 2010; Elbanna & Naguib, 2009). The research by these scholars supports earlier assertions by other researchers about the complexity of the decision-making processes. Therefore, to gain a deeper understanding of the KMPs of SBEs, an understanding is necessary to identify the critical factors that influence decision-making.

Boundaries and limitations. Scholars and business practitioners agree that SBEs are not fully benefiting from knowledge management and lag larger firms in developing KMPs (Laihonen & Lonnqvist, 2010). Despite all the sophisticated decision-making theories, tools, models, and frameworks used in practice, boundaries, and limitations exist. These limits can be in the form of resources, information quality, processing capabilities, or behavioral considerations. A few notable examples are

1. when faced with difficult decisions managers are more likely to seek advice and information from trusted advisers than rely on information in internal databases (Davenport & Prusak, 2011);
2. managers in firms with resource shortages often use intuition as the basis for decision-making and overlook more rational approaches (Elbanna & Naguib, 2009);
3. slightly profitable or unprofitable firms may not have the financial resources to collect, analyze, or outsource critical information (Elbanna & Naguib, 2009); and
4. decision-making methods based on static theories that may not be applicable

to dynamic markets or settings that require quick decisions (Moses, 2011; Wen-Cheng, Chien-Hung, & Ying-Chien, 2011).

Behavioral considerations, may have a large impact on decision-making in some organizations because of (a) emotions and deeply felt values (Gigerenzer & Gaissmaier, 2011); (b) cognitive or personal biases (Elbanna & Naguib, 2009; Rodrigues & Raposo, 2011); and (c) internal politics or other covert actions (Elbanna & Naguib, 2009). These factors individually or combined with competitive pressures underscores the findings in the literature that decision-making methods used by individuals are part of a complex phenomenon and may not always lead to rational decision-making. To the extent these decision dimensions result in satisfactory decisions executives are more likely to use the same methods in the future, even though better decision-making approaches may be available (Elbanna & Naguib, 2009). According to Elbanna and Naguib (2009), this is a bigger issue for smaller resource-constrained firms than larger firms. Greater resources (typically found in larger firms) are an enabler for rational process-oriented decision-making and are consistent with the RBV of the firm (Grant, 1996).

Performance Management

The primary goal of using a performance management system is to gain insight and visibility into the organization and from the marketplace. The rapid evolution of ICT is causing *barriers to erosion* to weaken and competitive strategies deteriorate quickly. This rapid deterioration requires firms with flexibility and a change management mindset that can adapt and react quickly to market challenges. Therefore, measuring performance becomes an essential feedback mechanism for executives to ensure the managers are

meeting their objectives.

Historically, firms have used metrics related to financial ratios and accounting standards. Developing performance management tools such as the balanced scorecard provides managers with visibility into core business processes. Soderberg et al. (2011) noted the balanced scorecard is a performance management tool used by management to align the strategic intent of the organization. The scorecard has multifunctional uses (a) operational control device, (b) management reporting tool, (c) strategic planning tool, and (d) change management tool. Scorecards, when properly designed, simplify communicating performance information, increase employee motivation, and helps leaders monitor performance. However, traditional scorecards report monthly performance using data collected in arrears versus capturing information in real-time. This limitation makes balanced scorecards less useful for competitive situations that require quick decisions or immediate business responses.

Effective performance management systems require alignment with the culture and the active support of senior managers. Conversely, performance management architectures fail because of problems with control, visibility, and communication. Soderberg et al. (2011) offered the following guidelines for firms implementing performance management systems:

1. Measurement—performance management systems must measure important activities or, at a minimum, actions with a strategic focus that support strategy execution.
2. Balance—the quantity and types of measurements should balance financial

and nonfinancial factors. This balanced approach will ensure managers do not excessively rely on financial metrics, which may skew perspectives about organizational performance.

3. Causality—there must be a clear link between performance metrics and the strategies followed by the organization. This causal relationship provides an explanation about how the organization will create value for its stakeholders.
4. Learning and feedback—a procedure where underlying assumptions, linkages, and metrics, prompt questions and motivate updates based on key events external to the firm or when organizational performance deviates from expected results.
5. Compensation—linking compensation to business performance increases employee commitment and motivation to achieve results.

Actually implementing these guidelines will connect performance management with the goals of the organization.

Business intelligence. Today, many companies use some fundamental form of business intelligence (BI) such as financial statement or ratio analysis. Historically, these reports support long-term planning and consist of metrics, scorecards, or dashboards of key performance indicators (KPIs). Business intelligence software includes modules to collect data, integrate data from different sources, a data analysis tool, and report writing features to enable better decision-making. The design of BI software can help managers answer what-if questions and produce reports along various analytical dimensions. However, data stored in silos and unconnected information systems makes setting up a BI

platform difficult. A primary design element of a BI platform is ease of access to a data warehouse containing data from every system connected both internally and externally to the company (Davenport, 2007). Although BI deployments offer many benefits, significant limitations exist. Business intelligence can help answer fundamental business questions, but the information created from these systems supports low impact business decisions (Yeoman, 2009). In contrast, the use of analytics–based platforms offers users immediate business insights and predictive capabilities. (Amit & Zott, 2012).

Business analytics. Information that emerges from computing platforms to support executive decision-making, problem solving, and risk mitigation is an emerging area of business practice (Coghlan et al., 2010). These platforms allow for immediate processing of business information to achieve a value-creating return on the absorptive capacity and knowledge assets of the firm. Data analysis tools provide companies with a decision-making capability to identify and deliver value-creating strategies to prevent erosion of their competitive advantage (Yeoman, 2009). Because companies perform in a competitive environment where prices, consumer preferences, and substitute products are always changing, business leaders need to adjust their business processes and decisions to remain competitive. Further, Davenport (2007) noted that because many industries use common technologies in producing and distributing their services, automating business processes is one of the last frontiers of differentiation. However, because of the large amount of data generated from various business systems while conducting business, executives have difficulty distinguishing between what data are valuable, relevant, or valid; therefore, *knowledge audits* are necessary. In addition, poorly designed systems

may fail to capture information that might make a difference in management decision-making. This research underscores the need to investment in programs and employees to improve the analytical capabilities of the organization.

Transition and Summary

The previous section contains justification for the need to examine the KMPs of service-oriented SBEs. Section 1 also includes the relevant research literature surrounding the concepts associated with KMPs and the impact these practices have on business performance. The scope of the literature review covered the characteristics of knowledge, problem-solving methods, information processing, organizational learning, business processes, and decision-making.

An explanation of the overall business problem, the problem under study, and the research method used to examine the research questions is the focus of Section 2. This section contains an overview of the contribution small business growth has on the U.S. economy, and the reasons KMPs in these companies is an important topic to research. Section 2 also covers the role of the researcher, selecting research participants, the research design, data collection, evidence analysis techniques, and a review of validity and reliability in qualitative research studies.

Section 2: The Project

The information contained in Section 1 supports the existence of a problem associated with the effective use of knowledge assets and the motivation for exploring the KMPs of SBEs. The general business problem focuses on how the improved use of knowledge assets may mitigate several factors linked to poor business performance (financial and nonfinancial) in SBEs. Review of the literature reinforced that knowledge assets are more valuable when managers focus on (a) decision making, (b) problem solving, (c) increasing absorptive capacity, (d) supporting organizational learning, (e) and improving business processes.

Many SBEs cease operations or fail every year (Small Business Administration, 2004), as shown in Table 1. Therefore, an opportunity may exist for managers to develop and expand the use of knowledge assets, coupled with other resources, to improve SBE business performance. The continuing evolution of information technologies is driving a strategic shift toward a knowledge-based economy (Powell & Snellman, 2004). This evolution implies that a change in business practices may be necessary, especially for resource-constrained SBEs, to capture value from organizational knowledge assets, which are largely intangible.

Section 2 consists of subsections covering (a) the research method and design, (b) the role of the researcher and participants, (c) the research population and sample, and (d) methods of data collection and analysis. The section concludes with an overview of bias, reliability, and validity.

Purpose Statement

The purpose of this multiple case study was to explore the critical capabilities that leaders of SBEs may need to determine when underperformance in revenue-producing activities is due to gaps in organizational knowledge or business practices related to managing knowledge assets. Creating competitive advantage in the marketplace influences the ability to manage information or knowledge effectively (Grant, 1996). The intangible (embedded) nature of knowledge describes why accessing, sharing, and reusing knowledge are difficult (Yin, 2014). Thus, discovering how managers of SBEs evaluate the efficacy of, assign value to, and eventually exploit organizational knowledge assets is beneficial.

Data collection consisted of participant interviews and the review of publicly available information related to the participants, such as (a) websites, (b) press releases, (c) newspaper articles, and (d) marketing brochures. Interview participants consisted of decision makers and members of sales, marketing, and customer service departments actively engaged in revenue-generating processes. I used purposeful sampling techniques to select service-oriented SBEs located in the northeast and west (see the Research and Design subsection for an explanation of and justification for this research methodology).

The ability to sell a competitive service, efficiently collect payments, manage cash flow, and satisfy customers was a key assumption critical to this study (Huggins & Weir, 2012; Porter, 1980). Mitigating the adverse effects of SBE underperformance and bankruptcy (in extreme cases) benefits society by creating job opportunities, supporting local economies, and reducing unemployment. The findings from this study will aid

policy makers, business managers, and employees in identifying, quantifying, and effectively managing knowledge assets.

Role of the Researcher

Qualitative research methods fundamentally require researchers to interpret data and information collected from direct contact with study participants. Because qualitative research involves direct contact with research subjects, potential personal and ethical issues may affect certain aspects of the study (Barusch, Gringeri, & George, 2011). For example, the presence of an unfamiliar person in the workplace may cause tension. I interviewed study participants using an interview protocol (Appendix B) to collect research data. The subject of direct or indirect bias is a fundamental issue in qualitative research (Shah & Corley, 2006).

In case study research designs, reducing researcher bias occurs in the data collection and data analysis phases of the study (Yin, 2014). In the data collection phase, using multiple sources of evidence and preserving a strict chain of evidence are common methods for reducing bias concerns related to construct validity and reliability. Using techniques such as pattern matching, explanation building, and rival explanations of observed phenomena in the data analysis stage reduces bias and improves internal reliability. The validity and reliability section includes an explanation of the approaches and methods used to improve the validity and reliability of this study.

Self-awareness and personal reflection are also critical considerations in qualitative research. In this study, opportunities arose for potential bias related to past work experience and personal relationships. For example, awareness and experience

related to how the behavior of employees and personal relationships can affect company performance constitute a critical factor when assessing the culture of an organization. As part of my business experience, I observed employees performing in nontechnical and specialized business capacities, which provided valuable insights about knowledge workers. Additionally, I have an understanding of the strengths, weaknesses, challenges, and hazards of decision making and problem solving with incomplete (ambiguous and uncertain) information in executive leadership positions. Finally, because of my previous experience managing bankrupt companies, I have gained firsthand knowledge of the cost to society when businesses cease operations or fail. However, my work experience consisted of working with large corporations where knowledge assets or resources were not a limiting factor in performance results for the company. Section 3 includes an overview in the narrative of the potential impact of these experiences on the results of this study.

On the subject of personal relationships, I was familiar with the services offered by the target companies and some of the participants selected for the study through past business relationships in the satellite industry. The selected companies were small businesses that performed as resellers, integrators, or service providers to larger companies in the satellite industry. I do not work for any of the companies included in the study or have any continuing business arrangements with them. The next subsection includes the justification for selecting the target companies and individual participants for this study.

Participants

The use of a multiple case study design necessitates identifying a research context and selecting study participants who align with the purpose of the study. According to Yin (2014), if the research objective is to gain insights or a deeper understanding of an event or setting, then purposeful sampling is a suitable approach to maximize collection of contextually rich data. Nag and Gioia (2012) used purposeful sampling in a qualitative study to gain insights about the technical, competitive, and strategic issues confronting the evolving metal casting industry. Seawright, Smith, Mitchell, and McClendon (2013) identified 54 independent entrepreneurs and 94 managers using purposeful sampling to investigate whether franchise owners' management practices were similar to those of entrepreneurs or nonentrepreneur managers.

The target companies, which represent distinct knowledge-intensive environments, had headquarters in the northeast and west with fewer than 25 employees. To explore the critical skills leaders need to exploit knowledge assets and produce revenue in different knowledge-intensive environments (cases), I identified job roles of participants purposely. The individual participants interviewed at each company were the primary decision makers or presidents of each community partner and key employees in the finance, customer service, sales, and marketing departments. The principles used to select participants were as follows: (a) they were involved in the KMPs of the company; (b) they had knowledge about revenue-generation processes; and (c) they were expected to benefit from participation in this study (Irvine, Drew, & Sainsbury, 2012; Whiting, Kendall, & Wills, 2013).

The fieldwork began by the internal champion identifying the appropriate pool of participants in sales, marketing, finance, and customer service. Before the interview, participants received written details about the study. Next, interested participants attended an information session to answer any questions that might arise, and I began the relationship-building process with the participants. In addition, each participant received a copy of the Informed Consent Form (see Appendix A) and was advised that his or her involvement in this study was voluntary and confidential.

Participants received verbal notice that they could withdraw from the study as described in the Informed Consent Form and that they did not have to answer any question that made them feel uncomfortable for any reason. The role of the Walden University IRB (Approval 10-29-13-0190985), as described in the consent form, ensures that adequate protections and procedures are in place for contact with human research subjects. As additional assurance, participants reviewed evidence of completed training sponsored by the National Institute of Health entitled "Protecting Human Research Participants" (see Appendix C).

Coding of participant responses occurred using a data management scheme described in the Data Analysis and Ethical Research sections to ensure anonymity and confidentiality. Storage of the evidence occurred on completion of the data analysis phase in a locked file cabinet. Limited access to the raw data, excluding participant identifying information, is available to third parties on request, subject to ethical and privacy guidelines.

The research design stipulated interviews with a maximum of 20 participants because of (a) financial limitations, (b) the need to collect enough data for analysis, and (c) to reach data saturation. However, economic conditions or other internal factors had the potential to affect this study. One of more of the community partners might decline participation, decreasing the pool of participants. As a contingency, approaches such as (a) increasing the number of community partners, (b) expanding the geographic region of interest, or (c) reducing the sample size to the number of available participants could mitigate problems associated with insufficient data. Yin (2014) noted that the use of purposive sampling in multiple case study research requires a minimum of only one participant for each distinct case. Therefore, reductions in the number of participants available for interviews would have allowed the study to continue as planned. The impact on the study results of a limited number of participants was a delimitation of this study, as described in Section 1 and covered in more detail in Section 3.

Research Method and Design

This section covers the underlying principles and justification for selecting the research method, design, instruments, population, and sampling protocol used in this study.

Method

Exploring social issues or problems that researchers seek to understand but are difficult to measure numerically requires the use of qualitative research methods (Shah & Corley, 2006). Denzin and Lincoln (2011) noted that qualitative research focuses on processes and meanings where difficulties occur in measurement, quantification, or

examination. A research method based on some form of measurement is not suitable when a researcher's interest is in gaining insights, discovering new knowledge, or understanding complex situations.

Shah and Corley (2006) and Yin (2014) observed that direct contact with participants in their natural environment is desirable to gain a thorough understanding of complex issues in qualitative studies. Because KMPs vary widely across firms, a customized and flexible research design is suitable for exploratory research. Research questions, as part of an interview protocol, are essential to gain a deeper understanding of the KMPs used in SBEs and to align the research method with the purpose of the study (Marshall & Rossman, 2011).

The resources, systems, and business processes used in a company influence managing information and knowledge. Specifically, differences in resources, expertise, business processes, culture, and decision-making approaches distinguish the management practices of each SBE from another. This lack of standardization and the difficulty, if not impossibility, of measuring the value of intangible knowledge assets reinforce the use of qualitative research methods. Finally, the research of KMPs in SBEs is a convergence of various theories including but not limited to competitive strategy (Porter, 1980), organizational learning (Curado & Bontis, 2011; Sharabati et al., 2010), and the RBV of the firm (Grant, 1996), making a quantitative research design too restrictive for the exploratory nature of this study. Collectively, these limitations excluded the use of quantitative research designs.

Evaluation of several alternative qualitative research methodologies was part of the research design process. I evaluated alternative qualitative research methods such as narrative, phenomenological, and ethnographic. It was determined that they were not suitable for exploring business practices in knowledge-intensive environments. Research related to life experiences supports narrative research, while the focus of phenomenological research centers on describing an event or phenomenon experienced by all study participants. Alternatively, ethnographic research investigates topics covering ethnic or cultural issues. Although an overlap exists among narrative, phenomenological, and ethnographic research designs in the areas of data collection and analyses, each research method requires different procedures for conducting scientific inquiries and has methodological limitations.

Further, to explore the problem under study; aligning the research question, data collection, and data analysis phases of the project was essential. Notably, narrative research entails collecting wide-ranging evidence to understand how the participant's life fits the context of the story narrative; ethnographic research requires researchers to be knowledgeable about the cultural anthropology of the group under study, and phenomenological studies force the investigator to ensure that all participants experienced the same phenomenon. Therefore, conducting this study using these quantitative research methodologies would have resulted in misalignment with the problem statement or the purpose of this study. In contrast, case study research is an appropriate qualitative research method when distinct business settings exist with clearly

defined boundaries. Case study research is suitable for exploring areas where current knowledge is minimal or limited (Yin, 2014).

Research Design

I used a multiple case study qualitative research methodology to conduct this study. Case study research is suitable (a) for exploring how and why questions, (b) when researchers seek to understand events that have contextual factors, and (c) when the focus of the study is on contemporary phenomena occurring in natural settings (Yin, 2014). The objective was to explore the KMPs and knowledge assets in purposely selected SBEs that perform in different knowledge-intensive environments within the satellite industry.

Case studies typically include multiple sources of data such as interviews, observations, artifacts, and documentation, resulting in a situation where there may be more variables of significance than available data points (Yin, 2014). In complex scenarios, the use of as many sources of data as possible to obtain a detailed explanation of the phenomenon under study is essential. According to Yin (2014), in situations where knowledge is minimal or limited, case study research is appropriate.

Research studies based on single cases can be subject to skepticism among colleagues in the research community; therefore, a preference toward multiple-case research designs reinforces the creditability of a study. Studies designed using multiple cases offer increased likelihood of study replication and more persuasive findings, and the results are often the basis for theoretical replication experiments in future research. In consideration of the benefits associated with case studies using contextually distinct business settings, the objectives of this study aligned with the advantages of a multiple

case study research design. The cases defined for this study link directly to the degree of knowledge intensity (contextual factors) in the target companies.

The objective of multiple case study designs, using *replication logic*, is to compare (*literal replication*) or contrast outcomes (*theoretical replication*) as predicted by a theoretical framework that establishes the conditions under which the phenomenon under study will and will not occur (Yin, 2014). A multiple case study is a holistic investigative approach. Evaluation of each case, within a context, occurs separately to draw conclusions. An important aspect of case study–based research is the iterative nature of the process and the possibility of uncovering information outside the original study design. Occasionally, this may require a redesign of the study or selection of different cases.

Case study method. Qualitative case study research methods focus on answering how and why questions (Yin, 2014). Conversely, the purpose of quantitative research is to examine hypotheses using some form of measurement to test theories, establish relationships, and confirm the statistical significance between variables of interest. The essential requirement of measurability in quantitative research excludes use for this study because of the difficulty of measuring practices, experiences, and behaviors that are a vital part of understanding the KMPs of SBEs.

Hacklin and Wallnöfer (2012) observed managers and executives making decisions using a business model framework in a qualitative case study. Barusch et al. (2011) provided guidance for researchers using qualitative research designs on how to convince readers, faculty, and peers of the creditability of their research using concepts

such as rigor, ethics, subjectivity, and reflexivity. Marshall and Rossman (2011) noted that well documented case study research encompasses diverse concepts:

1. Integrity demonstrated by a direct relationship between execution of the study and the research findings.
2. Rigor established by paying attention to details when collecting data and the strict enforcement of the research protocol.
3. The results of the case study presented to the audience in a useful form and format.
4. Vitality demonstrated by providing the reader with a clear understanding of the context and boundaries of the event under study.
5. Researchers demonstrate a strong sense of ethical responsibility.

The design of this study conforms to the general characteristics of an exploratory qualitative study outlined by Marshall and Rossman and is consistent with the case study research methodology defined by Yin (2014).

Although the use of case study research designs is common for exploratory research, one of the challenges with this method is the perceived of a lack of scientific rigor. While no standard definition for research rigor exists in the literature, the use of terms such as objectivity, reliability, replication, validity, measurability, and standardization are common (Barusch et al., 2011). Evidence from multiple data sources in case study research is more credible and convincing (Yin, 2014). A second complaint about case studies is the results usually do not lead to scientific generalizations (Yin, 2014). Yin also noted the intent of case study research designs is to achieve analytic

generalization or literal replication, as opposed to statistical relevance commonly associated with quantitative studies.

Case definitions. Each case listed defines the parameters and boundaries of different organizational environments (degree of knowledge intensity) used to explore the KMPs of SBEs. Selecting these cases represents three distinct competitive and knowledge intensive environments where SBEs (a) may require access to external knowledge assets, (b) involve knowledge transfer, (c) process and judge information quality, (d) evaluate conflicting information, (e) solve problems, and (f) decision-making when preparing sales proposals. Each case is essentially an experiment to assess the boundaries of Nickerson and Zenger's (2004) KBV problem-solving conceptual framework. This method of selecting cases is similar to performing multiple experiments; namely, the underlying replication logic typically used in multiple case studies (Yin, 2014). Bucic, Robinson, and Ramburuth (2010) used replication logic to select three management teams from different organizational disciplines to uncover contextually interesting variances as part of a multiple case study to investigate how leadership style affects team learning. In addition, Yin noted that identifying multiple cases with overlapping characteristics that allow for comparisons and contrasts adds creditability and increases confidence in the overall study.

Case 1—Resellers. The companies represented by this case engage in the resale of transmission services to larger companies within the satellite industry. This company performs in a fragmented, competitive market. Case 1 symbolizes the setting in which information needs are dynamic, competitors are unknown, have no publicly defined

process to select winning proposals, and knowledge of past prices paid for similar services are unavailable. This case represents a high resource and knowledge-intensive scenario. Given these conditions, a heuristics search problem-solving approach as described in the conceptual framework may be more favorable to this case.

Case 2—Service providers. The companies represented by this case sell satellite services that encompass the use of a point-to-multipoint multiplexed technology platform to governmental entities. Case 2 denotes the moderate knowledge-intensive setting where (a) where the procurement rules of government agencies require disclosure of all competitors, (b) formal request for proposals (RFPs) document business requirements, and (c) all competitors receive the same the answers to service questions reducing uncertainty. Finally, the RFP contains the criteria used to select the winning proposal, sellers have access to archival information about the buyer, and historical pricing information is available. In addition, key transactional data is available for purchase in commercial databases. In this setting, a problem-solving methodology based on a directional search may be beneficial.

Case 3—Subject matter experts. This case represents companies that sell specialized knowledge-based services to firms competing in the satellite industry. Case 3 signifies a setting where the company does not directly compete in the satellite industry, but instead produces specialized reports or knowledge that support industry competitors. In this setting, customers are buyers, as opposed to sellers pursuing a sales opportunity. The purchase of marketing research reports or specialized knowledge based services usually offer analysis on long-term industry trends and are not suitable for short-term

revenue generation. Therefore, the motivation for customers to buy these specialized information services is longer term in nature. However, companies in this category rely on specialized knowledge assets to generate revenue through the sale of high-value knowledge or content. This case corresponds to the low resource and information-intensive setting and represents the value of knowledge transfer or gaps in knowledge.

Population and Sampling

In this qualitative study, I used a multiple case study research design to explore the KMPs of service-oriented SBEs. Identifying various business environments (cases) used replication logic (Yin, 2014) and selecting individual participants was purposeful (Marshall & Rossman, 2011). Qualitative researchers should use sampling methods that will best achieve the goals of the study; namely, provide a multilayered understanding of the research problem, explore different viewpoints, and allow generalizing research findings (Marshall & Rossman, 2011). Purposeful sampling does not support theory development; therefore, statistical generalizations or inferences about the population are not appropriate (Bucic et al., 2010; Yin, 2014). However, the use of multiple cases in the study can uncover potential comparisons and contrasts between the various cases resulting in rich contextual insights.

The target companies for this study, which represent distinct knowledge intensive environments, have headquarters in the northeast and west with fewer than 25 employees. The primary criterion used to select firms of this size was the ease of tracking and mapping information flows through the organization and fulfilling a fundamental assumption of this study. The target companies consisted of commercial reseller(s),

federal government contractor(s), marketing research firm(s), and consulting firms selling information based services, competing in the satellite communications industry. These companies offer the opportunity to gain a deeper understanding of KMPs of SBEs in contrasting knowledge intensive business environments. For example, in government markets, competitive information is easier to obtain than in commercial markets because of government contracting procurement rules. While, in open markets, competitive information can be expensive to acquire or requires the ability to analyze fragments of data from different sources to create valuable knowledge.

The total population of participants consisted of employees working in job roles related to leadership, sales, marketing, and customer service. The exact size of the participant pool was unknown because the number of participants that would consent to participation in the study was unavailable prior to conducting this study. However, the maximum size of the population was a fraction of the number of employees at each type of firm specified in the research design.

The principle associated with replication logic in multiple case studies requires that data collection continue until data saturation occurs. I interviewed 10 participants and collected sufficient data to reach data saturation. The participants interviewed were the primary decision maker and key employees working in job roles such as sales, marketing, finance, and customer service involved in the revenue-generation process(s) within the target company. I used a semistructured interview question protocol to conduct interviews on the premises of each target company or through teleconferences depending on the schedule and availability of the participant.

Ethical Research

Ethical safeguards in human subject research are essential to protect the participants (lawful, posing no physical harm or psychological threat) and to establish the creditability of the study (Wolf, 2010). The use of a multi-faceted process as well as following the procedures created by the Institution Review Board (IRB) addressed the objective of establishing creditability. The procedure used to conduct this study:

1. Contact the CEO or President of the community partner to discuss the purpose of the study and determine their interest to participate in the study.
2. Upon agreement to join in the study, the business leader provided a list of qualified study participants according the selection criteria.
3. A meeting or teleconference with each participant occurred to discuss the purpose of the study, determine their interest, answer questions, and to begin the rapport building process.
4. Advised participants their involvement was voluntary and they could cease participation before the interview began or any point during or after the interview ended by notifying me, the business leader, or Walden University.
5. Notified participants they did not have to answer any questions that would make them feel uncomfortable.
6. Informed each participant of protections incorporated into the study to protect their identity and to ensure confidentiality of their responses.
7. Participants received a written copy of the Informed Consent Form contained in Appendix A to ensure they understood the nature of the study and my role

as a researcher.

8. Participants advised of Walden University's IRB process, notified of study approval by the university, and that no research can begin without their approval and a signed consent form.

The interviews held on the property of the community partner or by teleconference, were confidential and scheduled to minimize workplace disruption. Additionally, all participants voluntarily consented to recording the interview. In cases where participants declined the request to record the interview, data collection commenced using handwritten notes to document the interview. Each participant received an alphanumeric code to ensure privacy and confidentiality and assigned a coded classification label showing their case affiliation, job role, and method of data collection. For example, a label for Participant 1F7R or Participant 2M12H would identify specific participants instead of any personally identifying information. The coding scheme contained four parts:

1. The first digit represents the case.
2. The second digit corresponds to the job role of the participant (where F = finance; M = marketing; S = sales; C = customer service, and BL = business leader).
3. The third digit is a random number (1 – 20).
4. The fourth digit represents if data collection occurred electronically (R = recorded) or manually (H = handwritten).

These generalized categories provide enough contextual information about each interview participant without compromising ethical and privacy guidelines.

Participants received no incentives to take part in this study. However, upon publication of the study, participants may receive an electronic copy of the completed study on request. Storage of all data occurred immediately after the data analysis phase and protected in a locked file cabinet. Data destruction will occur in a manner consistent with destroying confidential information when the 5-year data retention period expires. Limited access to the raw data, excluding participant identifying information, is available to third parties on request, subject to ethical and privacy guidelines.

Data Collection

This case study focused on how small business enterprises use knowledge assets to solve challenging business problems, execute decisions, process information, and service customers when producing revenue (Sharabati et al., 2010). Specifically, the central research question concentrates on identifying critical skills SBE business leaders need to determine if gaps in knowledge affect revenue performance. The sources of data collection were through interviews with participants and publically available documentation. Multiple sources of evidence enhanced the construct validity and reliability of this study (Yin, 2014).

Semistructured Interviews

The objective of each interview with participants was to explore their daily involvement in business processes, use of procedures, and contact with other employees related to revenue generation, goal setting, and business performance. The format of the

interview used a semistructured investigative approach consisting of open-ended questions as the foundation to collect data and gain insights into how managers of SBEs use knowledge assets. The next section contains justification for selecting a semistructured interview protocol.

Goldman et al. (2009) used semistructured interviews with medical residents. The purpose of interviews with medical residents were (a) to discover the facilitators of their learning, (b) obtain a description of events where they learned, (c) understand the tactics students used to learn, (d) isolate the factors that contributed to their learning, (e) detect the challenges associated with their learning, and (f) evaluate the changes to student learning over time. Similarly, Giroux (2009) employed a semistructured interview protocol with owner-managers to explore critical problems they experienced in the history of their small business and the decision-making approaches used solve these problems. Rubin and Rubin (2012) noted that semistructured interviews are appropriate when (a) researchers seek a detailed understanding, (b) the interview protocol contains open-ended questions without fixed response categories, and (c) where researchers need the freedom to follow up on intriguing lines of inquiry. Therefore, due to the intangible nature of knowledge assets and practices associated with the use of these resources, I used a semistructured interview approach to collect data to explore the KMPs associated with revenue generation in service oriented SBEs.

I conducted all interviews with participants. Topics covered in the interview explored the use of knowledge assets for (a) decision-making, (b) problem solving, (c) information sharing, (d) information processing, (e) reward systems, (f) training

programs, (g) information storage, and (h) information retrieval, all of which are essential parts of a knowledge management system. Specifically, the objective was to discover the influence(s) these factors had directly or indirectly on revenue generation and business performance. Interviews were one-on-one private meetings held on the company property or teleconferences depending on the participant's schedule or preference. The planned duration of each confidential interview was 45 minutes to minimize lost productivity. However, individual interviews were adaptive and guided by responses provided by participants.

Documentation

Wang and Brennan (2014) collected data from document studies that consisted of reviewing company policies, training manuals, minutes of meetings, company internal memos, management reports, client contracts, and emails from key customers. Soderberg et al. (2011) analyzed balanced scorecard documentation across five dimensions (a) learning and growth, (b) business processes, (c) customers, (d) balance, and (e) linkages to obtain a better understanding of how the organization creates value. Yu, Liu, Huang, and An (2012) collected data from online customer reviews as part of a case study to investigate the predictive value of customer reviews on product sales performance.
I reviewed publically available documentation such as (a) marketing brochures, (b) websites, (c) request for proposals, and (d) newspaper articles of the participants. This source of evidence provided insights into the marketing strategies, business practices, and customer relationship management (CRM) priorities of the participants. In addition, a review of publically available information provided an opportunity to assess the

alignment between the execution of internal marketing plans and outbound marketing communication messaging into the marketplace.

Instruments

The primary instrument used to collect data from the semistructured interviews consisted of an interview protocol. The interview protocol consists of 15 open-ended questions covering the data needed to fulfill the purpose of the study. The questions in the instrument included the concepts of (a) knowledge acquisition and sharing, (b) information pathways and flow through the organization, (c) critical organizational capabilities, and (d) utilizing knowledge assets in the revenue-generation activities of the company. Three professionals in the satellite industry field-tested the instrument by reviewing and providing feedback on the clarity of each interview question. The data collection instrument (Data Collection Instrument for Individual Interviews) for participant interviews is in Appendix B.

A codebook of research variables provided the conceptual foundation to investigate the knowledge management practices within each target company. Table 2 illustrates the codes developed for this study, including a brief annotation.

Table 2

Data Analysis Codes and Descriptions

Category	Code	Description
Tenure	TEN	Experience of the individual in a functional position and experience with the company
Experience	EXP	Overall experience of the individual in business
Information Acquistion	INFOACC	Information acquisition capabilities/practices
Information Processing	INFOPROCESS	Information processing capabilities/practices
Information Retrieval	INFORETRIEVE	Information retrieval capabilities/practices
Information Sharing	INFOSHARE	Information sharing capabilities/practices
Information Storage	INFOSTOR	Information storage capabilities/practices
Process	PROCESS	The (in)formality or documentation of internal business processes
Resources	RES	The available resources available to the company (e.g., employee skills, capital, competencies)

Note. Developed by the author.

The strategies used to address construct validity, internal validity, and reliability in case studies requires the use of different methods and tests occur at unique phases of the research process (Yin, 2014). Construct validity confirmation in case studies uses tactics such as chain of evidence, key informant review, and using multiple sources of information in the data collection or final review stages of the study. Approaches such a pattern matching, explanation building, exploring rival explanations, and using logical models are all tactics utilized in the data analysis phase in this study to ensure internal

validity. Finally, demonstrating reliability in the data collection stage occurred by following a strict case study research protocol.

Data Collection Technique

The sources of data collection were from personal interviews. I used the following procedure to collect interview data from the participants:

1. Before the interview entries into a field journal, where applicable, documented the work environment, employee interactions, and resources available to the participant.
2. After introductions and building rapport, the interview commenced using the interview protocol. The interview protocol consists of profile and open-ended questions. However, if interesting lines of inquiry arise during an interview it may prompt further unstructured investigation or unscripted follow-up questions. The purpose of the interview questions was to research how participants acquired, processed, stored, retrieved and shared critical business information internal and external to the organization.
3. Recording of the interview, subject to participant approval, occurred using a Sony ICD-P520 digital recorder to record audio files (mp3 format). Dragon Naturally Speaking software preprocessed these files for transcription and data analysis.

All interviews with participants followed the same procedure.

Data collection from documentation consisted of (a) performing internet searches on the target companies, (b) analyzing interview transcripts, and (c) entering documentation into NVIVO.

Data Organization Techniques

Data resides in a series of NVIVO databases, electronic recording media, and personally produced documentation such as Word documents and Excel spreadsheets. A catalog annotated with data such as the media type, document name, source of the data, and the physical location documented the contextual information for each case. The data retention period is 5 years with data storage in a locked file cabinet. On the anniversary of the 5th year after the publication date of this study, data disposal will occur in a manner consistent with destroying sensitive information.

Data Analysis Technique

Data analysis commenced using theories, conceptual frameworks, and techniques related to qualitative research. Yin (2014) outlined a method for analyzing data in qualitative studies, including multiple case study research designs. The process involves analyzing the data on various levels from general to specific.

The analysis of the interview data began with transcribing interview recordings into a text format and organizing the raw data. Next, analysis of the text transcripts commenced using a coding scheme. To simplify data analysis, Table 3 contains a matrix mapping each qualitative research variables to profile and interview questions. Coding data collected from participant interviews consisted of reviewing the interview questions and carefully processing the transcripts through several iterations searching for data that

supported or contradicted themes in the literature (Denzin & Lincoln, 2011). The coding process consisted of developing labels consistent with the research questions and purpose of the study; namely, to dissect and analyze the data associated with the KMPs and use of knowledge assets at each target company. Using a combination of methods discussed by Denzin and Lincoln, processing of the interview transcript consisted of analyzing keyword word repetitions, thought-unit classifications, cross tabulations by keyword similarity, and cluster analysis using NVIVO software. In addition, the data analysis methods consisted of comparing and contrasting themes that emerged from the data, the literature, and the conceptual framework. This process continued until data saturation was achieved meaning no new themes emerged from the data analysis process. This process highlights the iterative and systematic approach associated with qualitative research studies. The data analysis procedure used to analyze the documentation source of evidence was identical to the process described for analysis of the interview data.

Table 3

Interview Protocol—Data Analysis Code Mapping

Category	Code	Profile/Interview Question Data Mapping
Tenure	TEN	PQ2, IQ14
Experience	EXP	PQ3, IQ7, IQ11, IQ14
Information Acquistion	INFOACC	IQ1,IQ2, IQ3, IQ9, IQ10
Information Processing	INFOPROCESS	IQ5, IQ6, IQ8, IQ12, IQ13, 1Q14
Information Retrieval	INFORETRIEVE	IQ2, IQ3
Information Sharing	INFOSHARE	IQ2, IQ3, IQ9, IQ13
Information Storage	INFOSTOR	IQ6
Process	PROCESS	IQ1, IQ4, IQ6, IQ8, IQ9, IQ10, IQ11, IQ13
Resources	RES	IQ3, IQ7, IQ8, IQ9, IQ11, IQ12, IQ14

Note. Legend: PQ = profile question, IQ = interview question. Developed by the author.

The data coding also occurred for each question to compare and contrast participant responses to each interview question.

According to Denzin and Lincoln (2011), themes are confirmations of patterns that are observable and identifiable through the analysis of written, audio, visual, or cultural data elements. Coding allows the discovery of themes contained within transcripts and requires enough data to reach saturation to show reliability, validity, and creditability. The use of a software program such as NVIVO simplified the process of identifying themes and pattern recognition as part of an iterative data analysis process.

This step included placing data in different categories, matching categories with sources of evidence, creating flowcharts, tabulating the frequency of certain words or thoughts, examining relationships, and placing data in other relevant classifications (Yin, 2014).

The KBV of the firm assumes that knowledge is the most valuable asset used to create competitive advantage and produce profits. Nickerson and Zenger (2004) refined the KBV of the firm to theorize the importance of knowledge acquisition for decision-making and problem solving. The data analysis technique supported the investigation of how knowledge transfer occurs throughout the firm, procedures used by employees in their daily activities, and the critical skills small business leaders need to manage intangible knowledge assets effectively.

Reliability and Validity

The concepts of validity and reliability form the basis for evaluating the quality of research designs. These concepts include four approaches commonly used in qualitative research to show creditability: (a) construct validity, (b) internal validity, (c) external validity, and (d) reliability.

Reliability

The purpose of reliability is to document detailed procedures reproducible by future researchers interested in replicating the findings of a study. Recording data accurately is critical to the creditability of a study. Researchers put procedures in place to record their actions in detail to ensure validity (checking for accuracy) and reliability (procedural consistency).

The main threats to any research study revolve around internal and external

validity. Therefore, designing precautions to minimize bias, improve reliability, and validity is essential. The intent of external validity in case studies is to achieve analytical generalization as opposed to statistical generalization typically associated with quantitative research studies (Yin, 2014). Specifying a multiple-case study research design, which is methodologically equivalent to multiple experiments in quantitative studies, is one approach to addressing the issue of external validity in this study. Demonstrating reliability included the following methods (a) using a case study protocol, (b) recording and accurately transcribing interview data, (c) documenting data analysis techniques, and (d) disclosing the procedures used in the case study.

Validity

In qualitative research, any strategy or technique employed by researchers during the conduct of research to validate themes, interpretations, or findings establishes validity (Marshall & Rossman, 2011). Researchers establish validity using several approaches. First, accurate definitions, descriptions, and representations of the case(s) under study demonstrate creditability as viewed by participants in the study. In this study, key informant transcript reviews established creditability (Yin, 2014). Transferability represents the extent to which the results of a study are generalizable or transferrable to different contexts or settings. The evidence of transferability included using a chain of evidence, accurately recording observations, and documenting assumptions used in the study. Assuring researchers, peers, and practitioners the methods and findings accurately reflect the purpose of the study is the objective of validation in research.

Transition and Summary

Section 2 covered the (a) role of the researcher, (b) rationale for selecting a qualitative research design, (c) criteria for choosing participants, and (d) data collection and analysis techniques. Included in this section is an explanation of the link between the conceptual framework, the research design, and using a multiple case study method supports the research objective of exploring the KMPs of SBEs. This section concludes with methods used to demonstrate validity and reliability in this case study. The next section contains the findings, contributions to business practice, and implications for social change.

Section 3: Application to Professional Practice and Implications for Change

The foundation of the study supports the claim that knowledge management is essential to developing profitable competitive strategies. As noted in Section 1, knowledge management has emerged as a response to complexity in the marketplace, and firms that continually enhance their knowledge assets (mainly intangible) maintain their competitiveness over multiple business cycles (Huggins & Weir, 2012). Therefore, the capability to convert knowledge into value using intangible assets supports the success of a company (Cohen & Levinthal, 1990). However, the complexity of the issues surrounding the effective management of knowledge assets increases risks associated with bankruptcy and business failure.

The purpose of this exploratory case study was to explore the knowledge management practices of small business enterprises. In Section 2, I discussed the structure and boundaries used to design this study, the data collection techniques, and the analysis methods, and I justified using a qualitative case study research design. This section contains (a) the results of this study, (b) applications to professional practice, (c) implications for social change, and (d) recommendations for future action.

Overview of Study

Managing knowledge assets is essential in creating competitive advantage and is linked to business performance through a process of converting knowledge into value (Giju et al., 2010). However, SBEs face challenges in this area, and as a result, the bankruptcy or business failure rate remains high for these entrepreneurial businesses (Mielcarz & Wnuczak, 2011). In this study, I employed an exploratory multiple case

study design and collected data from interviews and publicly available documentation to address the central research question.

Sources of evidence for this study, described in the Data Collection section, consisted of interviews with participants and documentation review. The specific business problem explored was that leaders of SBEs might lack the critical capabilities to detect or determine when underperformance in revenue-production occurs because of gaps in their knowledge management practices. Each participant answered the demographic open-ended questions in face-to-face or teleconference meetings as part of data collection.

I sent 25 invitations to potential participants through email, and 10 (40%) agreed to take part in the study. The research design was qualitative in nature; therefore, the data collection strategy was to collect interview responses from participants and review public documents to uncover patterns, themes, and rival explanations with respect to the participants' KMPs.

I coded the transcribed interview and documentation evidence through the process of open coding, axial coding, categorization, and thematic analysis. The data analysis process ended when data saturation occurred. The following themes emerged from the analysis of the interview data and documentation sources of evidence:

1. Opportunity identification limitations constrain scope and scale.
2. Document management practices impede value creation from intangible knowledge assets.
3. Process orientation extends benefits across the entire organization.

4. A misalignment exists between critical success factors and critical capabilities.

The next section contains an explanation of each theme, including the findings related to the research question.

Presentation of the Findings

This section contains the results of the study, applications to professional practice, implications for social change, and recommendations for future action. The purpose of this study was to explore the critical capabilities necessary for SBE business leaders to determine when underperformance in revenue-generating activities is due to gaps in organizational knowledge or business practices. Data collection occurred through detailed semistructured interviews with study participants and the analysis of publicly available information, all of which contributed to the research findings. The inductive content analysis included all data relevant to the overarching research question to explore the knowledge management practices of the participants. Three professionals from the satellite industry field-tested the interview instrument for question clarity. The reviewers acknowledged that they understood each question and recommended no changes.

Research Question and Conclusions

The research question in this study was as follows: What are the critical capabilities that leaders of SBEs need to detect or determine when underperformance in revenue-generating activities is due to gaps in organizational knowledge or business practices related to managing knowledge assets? Results of the iterative data analysis process provided the basis for the conclusions:

1. Opportunity identification activities are effective, with limitations in scale and scope.
2. Document management practices impede value creation from intangible knowledge assets.
3. Process orientation extends benefits across the entire organization.
4. A misalignment exists between the critical success factors and critical capabilities needed for long-term success.

The findings section contains a detailed analysis of each theme.

Findings and Collected Evidence

The data collected provided evidence for themes that the participants noted as being critical to revenue generation through organizational knowledge and business practices. This section contains tables showing archetypical participant comments, *thought unit* categories, and keyword frequency for each interview question. Appendix A contains the data collection instrument used for this study.

Interview Question 1: What is the most important information needed to perform your job role for supporting revenue generation? The participants explained that their goal was to acquire information about customer needs, decision makers, and budget allocations to uncover revenue-growth opportunities through lead generation, prospecting, and qualification. The majority of the participants agreed that qualified opportunities received more internal resources. Several participants also considered their competitive position and informally evaluated their likelihood of success as part of their early opportunity assessment rating.

This interview question had foundations in absorptive capacity, information processing, and organizational learning, as covered in the literature review. In addition, this question mapped to the INFOACC and PROCESS data analysis codes (see Table 2). The coding and subsequent categorization of separate units of evidence resulted in the creation of three thought units—namely, opportunity identification, qualification, and resources. Table 4 contains participant responses, including descriptive statistics for Interview Question (IQ) 1.

Table 4

Summary Findings for Question 1

Participant	Supporting Evidence	Thought Unit	Frequency
16	"The most important information I need to do my job would be to know who needs help and has a budget."	Opportunity/Information	40
4	"The most important piece of information is the names and addresses and phone numbers of the people who I have established working relationships, business relationships, whether a supplier, vendor, employer, and an employer peer, subordinate, superior, and competitors."		
5	"What I need to find is who is making the decision as well as the projects they are working on."		
20	"I would say the single most important type of information I need is detecting or becoming aware of opportunities."		
	"What I am looking for is our positioning and our possibilities or probabilities of winning the project in comparison versus our competitors."	Qualification	12
2	"The opportunity that I see that is more qualified and seems to be higher probability, there would be more time and investment into that particular opportunity … I would become more aggressive towards my interaction with the customer."	Resources	6

Interview Question 2: What are the source(s) of information? The sources of information identified by participants were (a) trade shows, meetings, word-of-mouth, and networking (direct contact); (b) sources such as Google, LinkedIn, social media, referrals and marketing (indirect contact); and (c) industry trade publications, satellite guides, and published articles by the participants. The participants also reported that their

external marketing efforts were more pull versus push based. The quality of information received from each source varied by whether the source was direct or indirect.

The categorization of separate units of evidence generated the addition of the marketing thought unit to the study codebook. The marketing thought unit provides contextual insights into how the participants approached marketing the company to new customers. Participant responses for IQ 2 are contained in Table 5.

Table 5

Summary Findings for Question 2

Participant	Supporting Evidence	Thought Unit	Frequency
2	"There is also attending trade shows where there are numerous companies all in the same industry. We tend to generate leads from those trade shows, networking events, and in meeting people."	Qualification (Direct)	37
5	"For the most part, it is word-of-mouth industry, and trade shows. Occasionally a good opportunity comes through from online out of luck."		
16	"… LinkedIn has been very beneficial …. I've had people actually contact me through LinkedIn and generated revenues from that."	Qualification (Indirect)	
20	"We do internet research and often times we'll detect the need just by reading the news paper and follow up from there and try to develop it into a bonafide project. We use sales reps to gather market intelligence both our own and our vendors. We found that our vendors, often times, are in wealth of information."		
5	"... more of a pull, we are definitely use word-of-mouth. We have been in the industry for some time and good or bad, we are a known entity so we haven't been into a whole lot of a push in marketing and branding to get our name out there and of the services that we provide."	Marketing	5
19	"Marketing, outbound marketing really doesn't, traditional outbound marketing really doesn't apply because it's such a specific targeted market we found. ... ours is such a targeted specific, select market and it's very few places you have to get to, a lot of different people but very few different places."		

Interview Question 3: Why do you use these particular sources of information? The participants reported that cost considerations drove selecting lead sources, which is consistent with the RBV of the firm (Table 6). The participants noted

that knowledge gaps existed in their information acquisition methods. They also recognized knowledge gaps in industry-specific technologies. Reducing gaps in knowledge or technology occurred partially by collaborating with suppliers and vendors.

The coding of evidence led to adding the knowledge gap marketing thought unit to the study codebook. The marketing thought unit provides contextual insights into how the participants approached marketing the company to new customers. A sample of participant responses for IQ 2 is contained in Table 5.

Table 6

Summary Findings for Question 3

Participant	Supporting Evidence	Thought Unit	Frequency
5	"A lot of it is cost and to show a return on investment. As a small business we have to watch and maximize what we spend our money on."	Resources	11
16	"I don't know of any other way to go about identifying … than through the trade media which is organized around the satellite industry or LinkedIn groups that are organized around the satellite industry so if its looking at a specific industry then those are the best sources."	Knowledge Gap	4
20	"We will usually partner with someone. But if we had more knowledge of those technologies, I could probably faster determine whether the opportunity is a good fit for us or not."		

Interview Question 4: What are your opinions about the quality of the information received from each source? What methods do you use to verify the validity of this information? As a group, the participants did not focus on or track the quality of information received from the sources identified in IQ 1. The quality of the

lead, from a revenue-production viewpoint, concerned participants to the extent that they invested more effort to qualify leads (Table 7). Therefore, the routine analysis of historical sales data held a lower priority than lead qualification.

Table 7

Summary Findings for Question 4

Participant	Supporting Evidence	Thought Unit	Frequency
5	"Quality is what, it is hard to quantify the quality … and takes effort to source it, it takes a lot of initiative."	Resources	34
20	"We cross check it with other sources and then of course go or initiate direct contact with the end user.	Process	21
16	"I haven't performed any analysis as far as which one is more, have been more effective."		

Interview Question 5: How does the information you collect flow through the organization (stored, archived, accessed, by whom and how)? Participants reported that information received through lead generation was either not formally stored or stored in some form of an electronic database. However, in those cases where storage occurred, the information was only accessible by the individual who initially collected the data (Table 8). The primary mechanism of information sharing was through weekly or periodic sales meetings.

Table 8

Summary Findings for Question 5

Participant	Supporting Evidence	Thought Unit	Frequency
2	" … information we typically haven't stored into a database, but is something that is brought to the table in our weekly sales discussions."	Information Storage/Sharing	21
	"Right now its typically in an excel spreadsheet and it is not widely shared throughout the organization. There is not a whole lot of collaboration on projects that we have done or are doing within the company."		
16	"I'll take notes and if it's a trade show, I usually make a note of action items to myself, about the person, and follow up on the plane back or something like that and put it into the contacts that I use .... contact management system for example, which is just the Apple contact manager."	Information Storage	5

Interview Question 6: What are your opinions about how the quality of information you acquire affects success in producing revenue? The objective of this question was to link information quality to results associated with revenue production. Data collection did not offer any insights in to a connection between information quality and revenue-generation success. However, the data from this question combined with the findings in question four (Table 7) provided insights into the participants views about information quality in their opportunity discovery and lead qualification efforts. Table 9 contains participant responses about information quality.

Table 9

Summary Findings for Question 6

Participant	Supporting Evidence	Thought Unit	Frequency
16	"... if I do think there's a qualified business opportunity I try to add them to a list and send them an immediate response about what we talked about to try to see if it's real or not ... that's qualifying the information but it's qualifying the conversation to see if it's a real possibility."	Qualification	43
20	"It is a continual evaluation and each member of the team is continually trying to add to the knowledge base of what we have regarding that opportunity."		
2	" … to me determines on where it initiated. If there's communication with the sources, the actual decision maker, then I view that source of information as pretty high quality. If the sales person or there is information is from going to a tradeshow or someone's referring a lead to us, then I look at that information as kind of low."		

Interview Question 7: How do find out if you missed revenue growth opportunities? The participants separated efforts to grow revenue into categories: (a) where the opportunity did not happen (not real), (b) postponed because of budget issues, or (c) lost to competitors. However, the participants did not view all opportunities as lost just because they did not produce revenue. The consensus perspective about lost opportunities was the difficulty in receiving notice about the status of particular opportunities, which needed effort on their part to uncover relevant details. The sources of this information include news reports, press releases, and networking conversations.

Table 10 contains participant responses describing their difficulty in learning about lost opportunities.

Table 10

Summary Findings for Question 7

Participant	Supporting Evidence	Thought Unit	Frequency
2	"Typically we will find that out through, I guess through industry news, press releases, or conversations while networking ... we have to look at what was maybe their process, was this bid a that went out, where was this bid posted, how do we become a part of that particular notification ... so that we can receive notifications on these types of opportunities."	Process	18
5	"Typically if we see that the project will move forward through someone else, and that is hard to do, you contact the client and ask did they move forward? It is very difficult to quantify whether it is a missed opportunity or that opportunity has gone away through the budget constraints."		
16	"So how do I find out that I lost the opportunity, I guess I lost it, I find out when I see that someone made a contract, or I come across maybe a new publicist for a new company, that would be how I would find out ..."		

Interview Question 8: How do you establish revenue goals or objectives? The methods used by participants to establish revenue goals varied from formal to informal. Most of the participants were business owners; therefore, they did not have a higher level reporting structure, external stakeholders, or incentives in place to encourage profit maximization. However, the participants cited that creating and launching new products

or services was part of the revenue-generation process. Table 11 contains the evidence collected from this interview question.

Table 11

Summary Findings for Question 8

Participant	Supporting Evidence	Thought Unit	Frequency
2	"The first step is looking at our current contract base and determining when those contracts are expiring or which contracts do we have continuing on until 2015. The next thing is looking at what new opportunities, what new or recurring special events that will be occurring in that year. And then we look at where do we just see new revenue opportunities. And based on our position or if this is something that we have been pursuing of something we have invested into being able to, in other words we have launched new products. We feel like we will have these new products in the marketplace for 2015 so what revenue can we attach to this so, who is our customer base, what are they buying today, and somehow be able to put a number to that. So when we put all those areas together, and then some of it is prospecting ... this is new business that our sales people will to have to out and obtain."	Process	31
5	"My revenue goals are usually bring in as much as you can, there is not a specific number, in a couple of years, the overall company number needs to hit this and everyone needs work towards it as hard as you can. There is not an alright you need bring in 5 million dollars and the sum of the parts equals what the company need to do, there is not that level of specification."		
20	"We pretty much set our goals based on prior year's performance and we try to keep like a running three year tendency of our performance and we are just always reaching higher."		

Interview Question 9: How would you characterize your performance in meeting those goals over the past 3 years? The participants subjectively rated their 3-

year revenue performance: (a) exceptional (43%), (b) exceeding (29%), (c) satisfactory (14%), and declining (14%). The findings from participant responses to IQ 8 and IQ 9 (Tables 12 and 13) supports the informal use of business performance reporting tools and processes.

Table 12

Summary Findings for Question 9

Participant	Supporting Evidence	Thought Unit	Frequency
2	"In the last 3 years we have maintained anywhere between a 90% to 105% of plus or minus of our revenue target."	Outcome	7
5	"I put it like a 6, slightly above middle because I could see some satisfactory but I think we could do more, we could see more if we put in some processes …"		
20	"Well you know I don't know, I suppose that would be one way of looking at it, another way is that we are just getting better and better at what we do, we are fine tuning everything. My team is very close knit and I find often times we are thinking the same thing. So I just think we are getting better."		

Interview Question 10: What training programs, seminars, or conferences have you attended in the past 12 months? Training was not a high priority for the participants, because of budget constraints (Table 13). The participants attended free training or in training sessions included as part of the conference registration fee. The locations and methods of training for the participants occurred in seminars (44%), conferences (33%), and online (22%). Investment in employee training is one method of increasing absorptive capacity in organizations.

Table 13

Summary Findings for Question 10

Participant	Supporting Evidence	Thought Unit	Frequency
5	"Training none. I have done a bit of online stuff for the sales force CRM but official classes or anything official, none. The company does not want to spend any money …."	Absorptive Capacity	18
20	"Well I go the satellite shows, the NAB shows, and listen to many other conferences. I am looking for new and unique things or ways of doing things so that is what I am looking for at these conferences ... 2, 3, 4 at the most partly because of my travel budget."		
16	"I haven't done a lot of training; I haven't invested in training."		

Interview Question 11: What gaps in knowledge, if any, do you feel you have or need to reduce to be more effective in your job role? The participants recognized the existence of knowledge gaps and the potential impact on business success (Table 14). The findings from this interview question exposed knowledge gaps in (a) technology, (b) marketing, (c) negotiating, (d) entrepreneurial skills, and (e) time management. Although one participant reported mitigating knowledge gaps in technology through collaboration, most of the participants did not identify any plans to increase training or reduce knowledge deficiencies.

Table 14

Summary Findings for Question 11

Participant	Supporting Evidence	Thought Unit	Frequency
5	"In my opinion there is always training. Marketing know-how, that is actually a very big need I feel for my position of marketing and branding ... and then the other prong of the training and education is technical, because this industry is a technology industry."	Knowledge Gap	22
20	"I feel that I have skill set gaps. I would like to improve my negotiation skills, my time planning skills."		
16	"I guess it's, knowledge gap would be how to create, sounds funny but how to actually create a much larger sustainable business model ... and how to ramp that up hire people and get financial backing or how to create something that then can be sold to a larger organization. So that's almost like entrepreneurial skills."		
2	"Technology advances rapidly. If you're not staying up on that in this industry, I feel like there are some gaps. I feel that these one of my gaps are in the technology aspect."		
20	"... we have been seeing here lately is bundling of different types of services into some of these tenders … which are outside of our core business. When that happens we will usually partner with someone but if I had more knowledge of those technologies, I could probably faster determine whether the opportunity is a good fit for us or not."		

Interview Question 12: What tools does the company use to manage sales or other revenue-generating activities? All participants reported using tools with data storage and retrieval features to manage revenue production. The tools ranged from Salesforce.com (structured data entry rules) to in-house developed spreadsheets (flexible data entry rules). In both cases, the participants also used financial and accounting

software for billing purposes. However, the databases lacked interconnection to promote data transfer or sharing of information (Table 15). One participant responded that data retrieved from the use of these tools was only as good as the information entered. None of the participants discussed the existence of a data entry, confirmation, or routine data cleansing process.

Table 15

Summary Findings for Question 12

Participant	Supporting Evidence	Thought Unit	Frequency
2	"The Company uses to manage sales is Salesforce.com. On the financial side. Well we were using QuickBooks for a number of years, form the financial side. We also use Scheduall and that is what all of our invoicing is generated from, all of our billing and invoicing."	Process	19
5	"Right now its typically in an excel spreadsheet and it is not widely shared throughout the organization. Most of the reported pipeline is pulled from our weekly sales calls and imported into an excel spreadsheet."		
20	"I have developed some spreadsheet tools myself and also accessed database tools that is just internal ..."		
16	I have a very good little project management software called Things from Mac which synchronizes with my Iphone and my desktop. I don't have a great system and all these systems are not, the only system that's truly really well integrated is that QuickBooks accounting system, everything else is kind of off on its own little silo ... No CRM.		

Interview Question 13: How do you make decisions to pursue or pass on potential revenue-generating opportunities? The participants used various methods to

pursue sales opportunities at different qualification levels. The decision criteria included (a) evaluating internal resources and capabilities, (b) risk, (c) profit margin, (d) costs, (e) relationships, and (f) competitive positioning (Table 16). However, the decision to accept or reject leads was flexible depending on the personal judgment of the manager or the salesperson.

Table 16

Summary Findings for Question 13

Participant	Supporting Evidence	Thought Unit	Frequency
2	"There are several things that I look at in terms of whether to accept or reject opportunity and one is, is this is opportunity something that my company can even provide … and if it is something we can provide, what are the risk factors? That goes back to qualifying an opportunity ..."	Capabilities	37
5	"There is not a discussion on strategy other than trying to maximize our margin. there isn't a strategy session on how to land the business. For the most part I will try to swing at about everything."		
20	"Well I am looking at my costs, I am looking at, how much is it going to cost me to provide the services that is being tendered. We look not just at the revenue possibilities but the resource requirements. We are a small company and our resources ..."		
16	"I don't use any particular tool but I look at the competitive situation … I look at the competitive information that I have, I also look at the relationship of how well I may know the person in the organization and how well it fits in with my expertise."		

Interview Question 14: In your opinion, what organizational capabilities are critical to the long-term success of the company? This question represents the central research question for this study. The critical capability reported by the participants was the ability to service customers and offer products of value. Given this initial response, further probing questions identified the need for strong customer relationships, experienced teams, and to improve core business processes (Table 17).

Table 17

Summary Findings for Question 14

Participant	Supporting Evidence	Thought Unit	Frequency
2	"I would say would be ensuring that we have the ability to service our customers and the ability to offer our customers products that are important to their businesses …"	Outcome	11
16	"Number one would be strong respected relationships with top marketing and CEO level executives at companies that are growing. When you're just representing yourself, it becomes harder to meet with these kind of people and develop a relationship."	Relationship	5
2	"Having an experienced and knowledgable team because we have to ensure that our finances are managed properly. That is critical."	Capabilities	5
20	"What I see as being very important in the near future is groom some of my team to be able to take over my position going forward."		
5	"We need more qualified, a more efficient way of finding new business."	Process	3
20	"Well going forward I think we need to institutionalize our operation a bit more. I am more of a seat of the pants type of guy and I think I need to institutionalize or professionalize I guess our operation a little bit more.		

Interview Question 15: Do you have any additional information or comments to add to our discussion? This question captured any closing thoughts from participants a cue to end the interview. The responses added insights to earlier questions in the areas of risk reduction, technology advances, resources, processes, and execution concerns. Table 18 contains a sample of the closing responses.

Table 18

Summary Findings for Question 15

Participant	Supporting Evidence	Thought Unit	Frequency
2	I would just say that one of the things that's been critical to our business as well and that goes back to a financial standpoint, and that is just ensuring that we're minimizing our losses, we're minimizing our risk, having processes in place to and checks and balances to help minimize those areas that has been critical in the past and will continue to be critical to our business. and then also again I think just overall, really positioning ourselves to where you know we are staying positioned as the industry evolves and as technology evolves and I think that has been some of our, I think it has been our challenge over the last few years so I think that again is has been critical to our business."	Process	3
20	"We are very small and tightly focused company. Our resources are very very limited so we are always on the lookout for the best use to put those resources to produce, to work."	Resources	2
5	"We have covered a lot of things that should be done whether we do them or not, that is a different story."	Outcome	1

Documentation. The participants acknowledged that an essential component of their revenue-production efforts included the establishment of strong relationships with their customers. The data collected from IQ 2, IQ 4, and IQ 6 substantiates that higher quality leads came from direct contact with participants. Conversely, data collected from IQ 3 and IQ 11 exposed potential knowledge gaps in marketing and information acquisition. Investigating the importance of customer relationships concentrated on reviewing the participants marketing brochures and websites to detect the presence of relationship building concepts in outbound communications.

The results of the examination of public documents confirmed only 10% of the community partners used the word relationship on their website home page. This statistic increased to 30% when the data from marketing brochures is included. The remaining community partner websites and documentation stressed attributes such as personal service, integrity, seasoned management team, hands on, diligence, and fair pricing in their external communications. These findings, while not conclusive, highlight a potential KMP gap in the participants' external marketing communication documentation.

Cluster analysis. As part of a comprehensive data analysis process, cluster analysis and cross tabulations by word similarity for each interview question provided additional insights about potential links embedded in the collected evidence.

The first cluster (Figure 5) shows linkage among (a) the information needed by participants to perform their job duties, (b) the sources of information, (c) the participant's perception of about the quality of information received from each source

and how information is verified, (d) how the quality of information affects revenue-production success, and (e) decision-making relative to pursuing opportunities. The ISQD connection shows the linkage between participant responses and the linked interview questions for cluster 1.

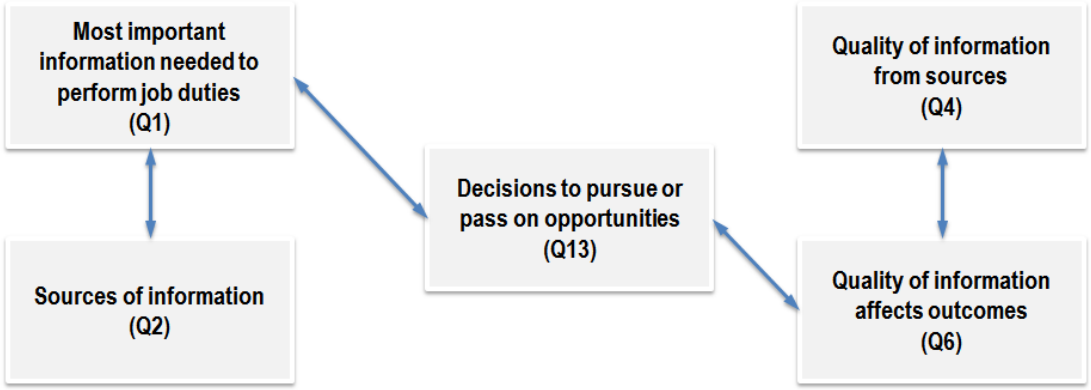

Figure 5. Cluster 1: The ISQD connection. Developed by author.

The second cluster (Figure 6) illustrates the connections between (a) how captured information flows through the organization, (b) revenue goal setting, (c) revenue production performance, and (d) tools used to manage revenue-production activities. The IGPT connection shows the linkage between participant responses and the linked interview questions for cluster 2.

Figure 6. Cluster 2: The IGPT connection. Developed by author.

Cluster 3 (Figure 7) displays the relationship between (a) reasons for using certain sources of information, (b) training, and (c) knowledge gaps. The KG connection shows the linkage between participant responses and the linked interview questions for cluster 3.

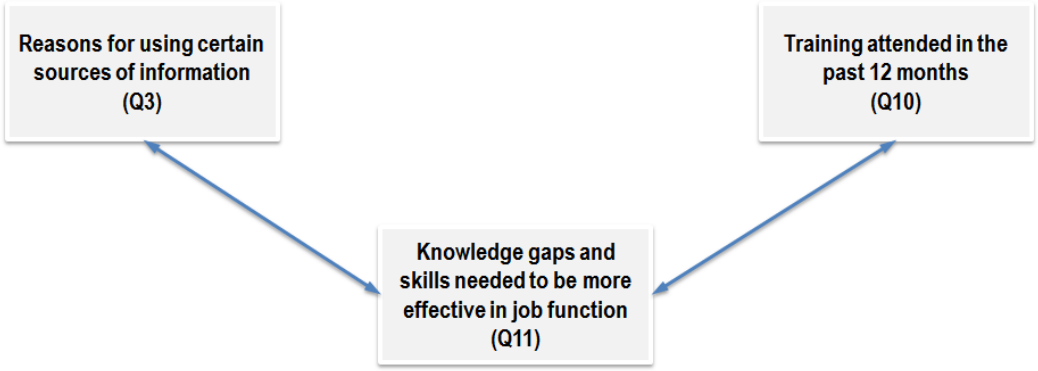

Figure 7. Cluster 3: The KG connection. Developed by author.

The fourth cluster (Appendix E) shows the interview questions where no or minimal keyword similarity overlap exists. The CCML outliers highlight potential areas of KMP misalignment. The outlier IQ 14 highlights a possible misalignment between the KMPs of the participants and the critical capabilities identified by business leaders needed for success in the future. The outlier represented by IQ 7 is another indicator confirming that participants do not track or have processes to monitor missed opportunities. The final question IQ 15 provided participants an open forum to identify other areas not covered in the main interview. Participant responses to this question did not yield any new information.

Findings Related to the Literature and the Conceptual Framework

The primary themes reported in this section surfaced from content analysis of the data where most of the participants offered similar perspectives. Data saturation occurred when (a) no new information emerged after ten interviews, (b) keyword frequency

repetitions exhibited recurring patterns, and (c) when keyword cross tabulations including cluster analysis substantiated the primary themes. Yin (2014) noted that researchers should compile bits and pieces of evidence with the objective of presenting to the reader a compelling story about the findings.

With the noted limitations, four central themes associated with the knowledge management practices in SBEs were identified from analyzing the evidence. This section contains an examination of each theme and links the findings to (a) the literature, (b) the conceptual framework, and (c) the research question to aid the reader in interpreting the results. Yin further noted that converging data sources, methods, and analyses techniques help to show investigator creditability.

Theme 1: Opportunity identification activities are effective, with limitations in scale and scope. Information acquisition is a critical part of the sales process for SBEs in their efforts to uncover revenue opportunities. Opportunity identification is part of a complex problem-solving activity consisting of people, processes, and results (Jablokow et al., 2010; Nickerson & Zenger, 2004). The initial stage of the lead generation process is to uncover or identify business opportunities. Fundamentally, lead generation is a problem-solving process where the problem of revenue growth drives finding a solution by identifying and converting qualified leads into value for the company.

Most the participants received information about revenue opportunities through direct contact with prospects, which is consistent with the conceptual framework on how actors search for information (Nickerson & Zenger, 2004). The participants in this study

relied heavily on relationships with existing customers, vendors, and business partners to identify leads. A typical source of leads in this category came from attendance at trade shows through interactions with existing customers, meetings, and networking (Table 5). Leads from direct sources were of higher quality and allocated more internal resources to accelerate revenue conversion (Table 5; Table 9).

Revenue opportunities occurred less frequently through indirect sources such as LinkedIn, social media channels, referrals, industry trade publications, and press releases (Table 5). Leads from indirect sources needed additional effort to determine the quality of the lead (Table 7). In both cases, resources limited the scale of the opportunity identification process. The small number of employees involved in sales roles, added employee non-sales job responsibilities, and budget limitations all contributed to resource constraints. Using a small set of lead generation tools and the reliance on pull marketing techniques resulted in scope constraints. Participant 5 summarized it this way, "I am spending more time actually putting out proposals and managing current clients than new client or prospect acquisition."

Qualifying opportunities was equally complex from a resource and knowledge perspective, especially in cases where the business opportunity emerged from indirect sources. Qualification requires the salesperson to acquire information to (a) decide how to serve the customer, (b) determine the amount of effort to assign to an opportunity, and (c) estimate how long it will take to convert the lead into income. The source(s) of information to qualify leads may be in internal repositories such as commercial sales

systems, financial databases, and spreadsheets or may require the use of external knowledge assets.

The participants used various methods to qualify leads by acquiring more information in one or more of the following areas:

1. current products in use by the customer,
2. the financial status of the company,
3. management contacts and final decision maker(s),
4. more details on the services needed,
5. past buying habits,
6. customer budget levels,
7. service implementation dates,
8. uncovering risk factors,
9. determining the profit margin, or
10. the competitive environment (including investing time in relationship and trust building).

Analysis of the interview data coupled with field notes recorded from participant customer meetings exposed the different methods participants used to qualify leads from trial-and-error to the use of heuristic based approaches. These findings are consistent with the conceptual framework on how actors search for information and reduce uncertainty (Nickerson & Zenger, 2004). The participants also noted determining the quality of the lead was difficult to quantify (Table 9). However, they felt the information

received through their qualification efforts was the best information available highlighting a potential misalignment in this area.

Opportunity identification and qualification are part of a resource allocation process, which is consistent in the literature with the RBV of the firm (Brown, 2012; R. Grant, 1996; Ippolito & Zoccoli, 2010). On one hand, the study results support the benefit of salespeople initiating and maintaining direct contact with prospects and customers because these sales activities yield higher quality leads. Conversely, if the sales staff allocates a significant amount of time on opportunity qualification; an equally important sales activity, less time would be available to prospect for new opportunities.

Because both activities are labor-intensive, resource constraints (Table 6) become a limiting factor in the absorptive capacity of the participants. Business leaders may focus on short-term revenue gains versus building a longer-tail sales backlog realized through a sales nurturing process (Cohen & Levinthal, 1990). This tradeoff becomes noteworthy when staff responsible for revenue-generation has other responsibilities not directly related to their revenue-generation activities. In addition, the ISDQ connection supports this theme by establishing a link between the opportunity identification process and decisions about allocating resources to pursue revenue opportunities. Collectively, this theme provides new insights into the challenges experienced by the participants in the areas of information acquisition and information processing. This theme also addresses the portion of the research question related to how gaps in KMPs contribute to business underperformance. Figure 8 contains the coding relationships that emerged in developing this theme.

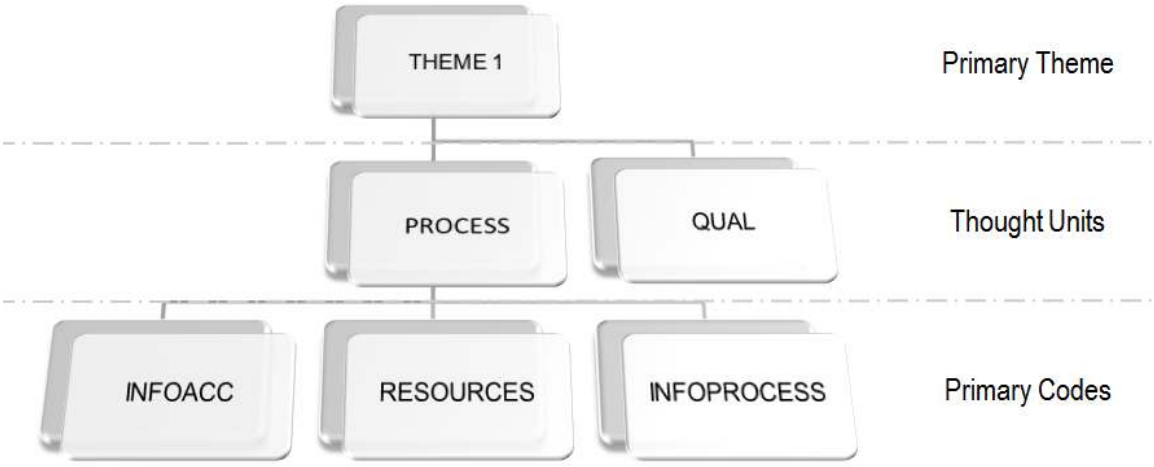

Figure 8. Data analysis code mapping relationships for Theme 1. Legend: INFOACC = information acquisition; QUAL = qualification; INFOPROCESS = information processing. Developed by author.

Theme 2: Document management practices impede value creation from intangible assets. Data stored in various information containers or repositories such as (a) memos, (b) emails, (c) presentations, (d) customer proposals, (e) reports, and (f) databases; collectively called documentation represents valuable intellectual capital. Documentation is a vital source of historical information that promotes organizational learning and is a result of employing knowledge capital. When employees explicitly capture information, integrates it into information repositories, and apply their knowledge in routine business practices, value creation transpires. The mechanism of value creation occurs by converting tacit knowledge into explicit knowledge (Curado & Bontis, 2011; Fiedler & Welpe, 2010; Wu et al., 2010).

Strategic decision-making is an essential component of creating value from intangible knowledge assets. Decision-making is a complex combination of preferences,

biases, and judgments individuals have about information they have access to in the ordinary course of business. In addition, decision-making depends on the skills and knowledge of the decision maker. In the literature considerations complicating decision-making are relevance, quality, and the ability to access key information (Jørgensen et al., 2012; Thiel et al., 2012).

The participants answered a series of questions related to their document management business practices (IQ 1, IQ 5, IQ 8, IQ 9, and IQ 12) in the areas of opportunity identification, qualification, goal setting, and business performance. The challenges participants reported experiencing was consistent with the findings of Jørgensen et al. (2012) and Thiel et al. (2012) who reported information timeliness and revelance are important information processing issues. Timely and revelant information for decision-making, lead generation, or qualification drove participants to get information through their direct efforts (Table 4). The results of the data analysis indicated that participants use various methods to store information ranging from personal notes on business cards (observed by me in a customer meeting) and internally created Excel spreadsheets to formalized systems such as Salesforce.com (Table 8). However, the participants reported the majority of the tools used to manage the sales function lacked connection to the internal computing infrastructure to support information sharing or knowledge transfer (Table 8). This business practice results in knowledge silos; only benefiting the actor who initially obtained the information (Davenport, 2007). This practice also increases the potential for knowledge-sharing

hazards or gatekeeping as described by Nickerson and Zenger (2004) in the conceptual framework.

Assessing the quality of information from different sources was equally challenging for the participants. The responses to IQ 3, IQ 4, and IQ 6 prompted the participants to express their opinions about the quality of information received from their revenue-generation and opportunity qualification efforts. The findings related to information quality were inconclusive due to the lack of any formalized processes to capture or analyze the value of information obtained from various sources. However, the data obtained from participant interviews supported a phenomenon described by Nickerson and Zenger (2004) as a directional search exposing the tradeoff between information quality and reducing uncertainty by acquiring more information as noted by Kaynak and Carr (2012). Experience guides directional searches and lacking documentation or metrics to influence future information searches; such efforts are subject to trial and error or wide variations (Table 7). Participant 2 offered the view that "documenting sales and pipelines is only as worthwhile as the information that is input into it" which concurs with the views of Jørgensen et al, (2012) and Thiel et al,. (2012) related to an information processing vulnerability described as information filtering, chunking, and abstracting.

The participants have many opportunities to capture critical information from various business processes in the ordinary course of business. When situations arise where a decision requires new information or knowledge, allocating resources is necessary. Participants expressed common experiences about how resource constraints

influence critical business practices in the areas of opportunity identification, lead qualification, information processing, and storage. The findings from this case study made known various reasons for the lack of formal document management procedures: (a) budget constraints (Grant, 1996), (b) time constraints (Lallement, 2010), (c) preference for verbal or informal communication of critical information (Goldman et al., 2009), (d) communication by email, and (e) the absence of a document management system (Table 6; Table 8; Table 11).

In the literature, the definition for absorptive capacity is the ability to convert knowledge into value. The components of absorptive capacity include organizational practices used to acquire process, interpret, transform, and apply knowledge to create value. Investments in absorptive capacity can produce positive economic effects by making knowledge assets more productive (Cohen & Levinthal, 1990). For example, investments in human capital as part of employee training and development, mainly a resource allocation decision, can increase absorptive capacity. The participants suggested that training was not a priority because of budget constraints (Table 13). Most of the training provided to the participants occurred at trade shows with the dual-purpose of meeting with customers and prospects.

Absorptive capacity when viewed through an information pathway or communication lens, promotes knowledge sharing with actors external to the firm and helps disperse knowledge within the firm (Curado & Bontis, 2011; Millar & Choi, 2010; Wynarczyk et al., 2013). Implementation of any practices or tools to encourage knowledge transfer would also improve the absorptive capacity of a firm. In both cases,

the study results support the observation that opportunities exist for participants to increase the absorptive capacity of their organizations. Notably, an expanding exploitation capacity gap between the capabilities of an SBE and the marketplace is a critical business performance issue because the inability of business leaders to detect, determine, identify or capitalize on emerging marketplace trends results in missed revenue-producing opportunities (Camisón & Forés, 2010; Ippolito & Zoccoli, 2010).

Given the lack of resources and the recognition that employees in SBEs have multiple job responsibilities, business leaders must take a proactive approach to managing their organizational knowledge otherwise rework may occur resulting in inefficient use of resources. In addition, the lack of formalized document management procedures for storing and sharing information results in a concentration of company knowledge in a few individuals which can affect company performance should key employees leave the company. This theme provides new insights into how document management practices can impede value creation in the areas of absorptive capacity, information processing, and knowledge transfer. This theme links to the section of the research question aligned with the assimilation, exploitative, and information dissemination capacity of an SBE. Figure 9 displays the codebook relationships for theme 2.

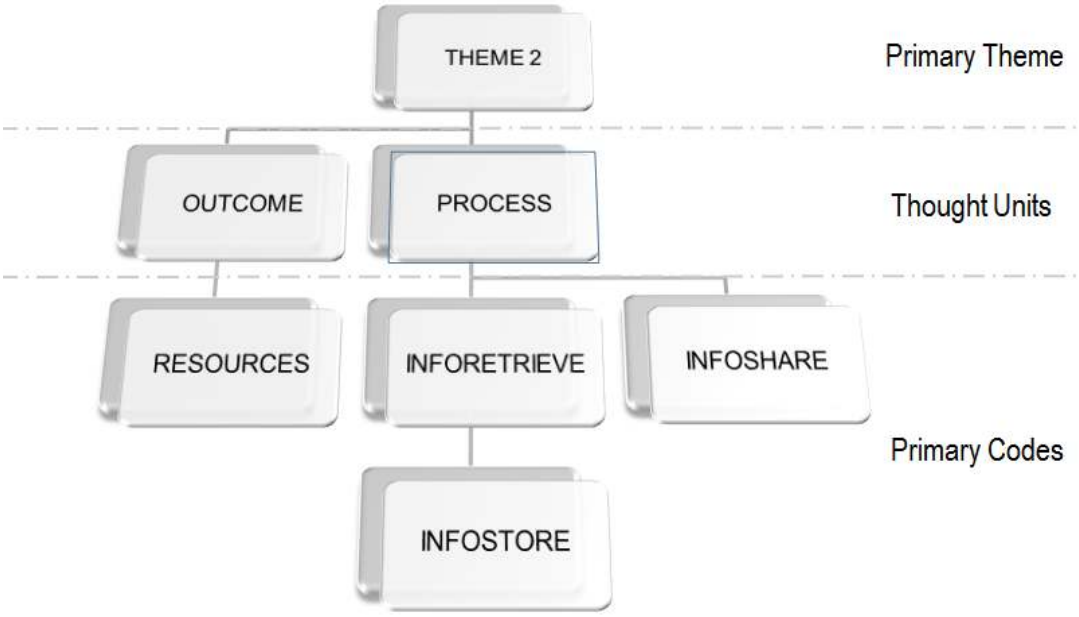

Figure 9. Data analysis code mapping relationships for Theme 2. Legend: INFOSTORE = information storage; INFORETRIEVE = information retrieval; INFOSHARE = information sharing. Developed by author.

Theme 3: Process orientation extends benefits across the entire organization.

The speed of knowledge creation, disruptive innovation, and the sophistication of new products and services introduced to the marketplace have transformed business models and daily businesses operations. Davenport and Prusak (2011) referred to this transformation as the digitalization of business or competing on analytics. This transformation has also uncovered expanding gaps in (a) assimilation capacity (Cohen & Levinthal, 1990), (b) exploitation capacity (Camisón & Forés, 2010), (c) information acquisition capabilities (Akgün et al., 2007), and (d) dissemination capacity (Akgün et al., 2007), when coupled with resource limitations creates an environment where value erosion occurs. Conversely, with formalized business practices the effectiveness of

knowledge assets increase, value erosion decelerates, and tacit knowledge transforms into explicit knowledge to create value.

A series of interview questions were directed toward the existence of formalized knowledge management practices and documented business procedures:

1. How information is verified, stored, and disseminated throughout the organization (IQ 4 and IQ 5).
2. The methods used to identify missed opportunities (IQ 8).
3. The approaches used to establish revenue goals (IQ 9).
4. Information used to make decisions to accept or reject of business opportunities (IQ 13).

The evidence collected verified that no formal knowledge management procedures existed. However, the responses from the participant suggested the existence of routine informal practices frequently executed by the participants (Tables 8, 9, 11, 12 and 17). The hedge words and phrases used by the participants to characterize or approximate their process management practices were (a) “no it’s not,” (b) “our sales process is not at the point where the preparation of sales proposals are structured,” (c) “no formalized process exists on sales proposal storage,” (d) “nothing is formalized as to why an opportunity was lost,” (e) “what we do is not formalized,” and (f) “if someone gathers particular information.”

Given the small size of the participant companies, informality is a natural way to conduct business daily. This informality also extends into almost all essential business processes, which affects the efficiency of knowledge assets and the knowledge

management practices of the company. Informal business processes coupled with resource constraints (R. Grant, 1996), limited investments in human capital (Jiménez-Barrionuevo et al., 2011; Lichtenthaler & Lichtenthaler, 2009), and documentation management deficiencies (Akgün et al., 2007; Kaynak & Carr, 2012), may impede or block discrete knowledge assets from creating value and possibly contribute to suboptimal business performance (Soderberg et al., 2011). In addition, investments to innovate and improve processes help companies increase revenues or increase profit margins (Amit & Zott, 2012).

This theme highlights the participants' preference for using informal process management practices in various areas. This method of execution is efficient and cost-effective. However, without implementing formal process management methods, SBE leaders may experience challenges (a) learning from past experiences, (b) reducing costs associated with duplicated efforts, (c) unlocking the value of intangible knowledge assets, (d) predicting changes in the marketplace, or (e) capitalizing on the benefits of the digitalization of business. The evidence supports the link between KMPs and business performance. Figure 10 contains the data analysis code mapping for theme 3.

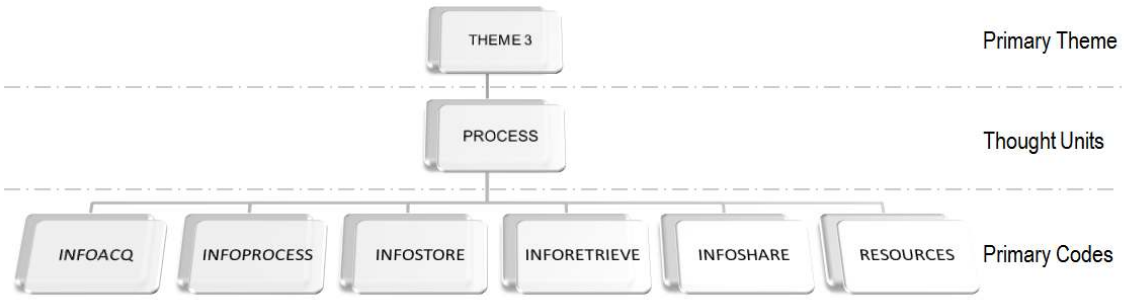

Figure 10. Data analysis code mapping relationships for Theme 3. Legend: INFOACQ = information acquisition; INFOPROCESS = information processing; INFOSTORE = information storage; INFORETRIEVE = information retrieval; INFOSHARE = information sharing. Developed by author.

Theme 4: A misalignment exists between business practices the critical capabilities needed for long-term success. The success or failure of all business strategies, decision-making, and problem solving becomes evident when evaluating business performance (Amit & Zott, 2012; Coghlan et al., 2010; Davenport & Prusak, 2011; Yeoman, 2009). Measuring business performance is a valuable feedback tool for SBE leaders to evaluate their achievement of business objectives (Jansen et al., 2011; Liberman-Yaconi et al., 2010). Managers use traditional financial, ratio analysis techniques, and scorecards to measure both financial and nonfinancial business performance (Soderberg et al., 2011).

The participants responded to two capstone questions: (1) what organizational capabilities were critical to their long-term success and (2) how would they characterize the financial performance of their SBE over the past 3 years. The objective of these questions was to evaluate the alignment between the strategic intent of the SBE leaders, the routine business practices, and the capabilities of the organization. On the first

question, the participants identified three capabilities critical to the future success of the business: (a) the ability to offer valuable services to customers, (b) building strong and respected customer relationships, (c) having an experienced and knowledgeable team capable of running the business, (d) a more efficient way of finding new business, and (e) institutionalize operations (Table 17). These results were consistent with earlier themes identified in this section. However, several discrepancies emerged from the data.

1. Ability to offer valuable services—the participants reported introducing 1 – 2 new services each year. These new services increased revenue to some degree and the process for identifying new services originated from the SBE business leader. This practice is consistent with the informality of developing and executing marketing strategies in SBEs. From an alignment perspective, the ability to offer customers valuable services requires acquisition of information about customer needs pre-launch to develop new services or receive feedback about the effectiveness of the new service post-launch. The ISQD finding connects the importance of acquiring information with revenue-production decisions. However, the participants reported no specific revenue goals, business plans, or performance-tracking tools existed for these services as noted in themes two and three prompting further exploration.
2. Building strong and respected relationships—the participants stressed the importance of building and maintaining relationships in their efforts to produce revenue. Most of participants reported, and partially confirmed through review of community partner websites,their companies did not

allocate significant marketing resources to attract new customers, actively use social media for relationship building, offer loyalty programs, routinely survey customers to obtain feedback, or have formalized processes for relationship nurturing. The growing number of social communication channels is a challenge for small businesses to engage with customers because customers can now be more proactive in retrieving information about a supplier without direct contact (Fensel, Toma, García, Stavrakantonakis, & Fensel, 2014; Malthouse, Haenlein, Skiera, Wege, & Zhang, 2013). Effective customer engagement for small businesses requires skills and dedicated resources in information dissemination, monitoring, and listening. For instance, small business employees may experience problems in their customer engagement efforts in scalability, cost, channel personalization, and bilateral communication (Fensel et al., 2014). The primary methods used to sustain customer relationships included meetings at trade shows, telephone calls, and occasional social events such as dinners bringing into view the effectiveness of their customer engagement practices. The significance of expanding the scope and scale of communicating (including the company website and social media profiles) with customers and prospects is because while they may not immediately represent a revenue-generating opportunity, maintaining the relationship is valuable should the prospect need services in the future.

3. Experienced and knowledgeable team members—in response to the interview profile questions, the participants discussed their career progression, exposing a pattern of career advancement based on experience, which is valuable in many companies and industries. The participants reported their companies invested minimally to expand their skills or knowledge (K-G connection). The evidence supports the position that company executives do not make employee training a priority; therefore, the absorptive capacity of the participants or their organization is not increasing from investments in human capital through training. Experienced workers represent a valuable knowledge asset for SBEs. In addition, employees have intangible skills and abilities in other areas that may benefit the organization outside their regular job duties. Minimal investments in employee training and a preference for SBE leaders to hire employees with industry business contacts limits the absorptive capacity of the organization. The implication of negligible investments in internal knowledge assets results in an expanding exploitation capacity gap between the capabilities of the organization and the marketplace (Camisón & Forés, 2010).

The second question concentrated on business performance. The results show that 72% of the participants self-rated their business performance as exceptional or exceeding goals while 28% rated performance as satisfactory or declining, which may indirectly link to how participants reported establishing revenue goals (IGPT connection). The revenue goal setting process ranged from setting goals based on the previous years'

performance to a more analytical approach (Table 11). The evidence collected relative to business performance uncovered a possible bias toward favorable outcomes given the informality of the goal setting process and minimal use of performance measurement tools evaluate business results.

In both cases, the evidence supports a misalignment between the capabilities identified as critical to success future success and routine operating practices. The CCML outlier confirms that no overlap exists between the critical capabilities needed for future success and the KMPs reported by participants. This theme underscores the importance of metrics and response mechanisms to align the strategic goals of the business leader with the core capabilities contained within the organization, including practices that occur in daily business operations. Figure 11 contains the code mapping for this theme.

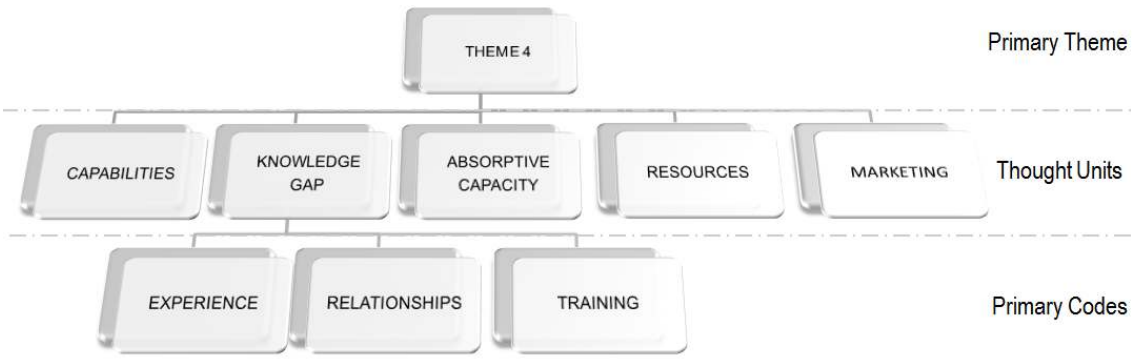

Figure 11. Data analysis code mapping relationships for Theme 4. Developed by author.

Rival Explanations

According to Yin (2014), the analysis of data collected in case study research designs employs analytical approaches that connect research findings with conceptual frameworks, detailed case descriptions, use descriptive statistics, and explore rival explanations. As noted in the prior section, I found a misalignment between the strategic intent of the business leader and business practices used in the organization (theme 4). These rival explanations focus on capstone interview questions IQ10, IQ12, and IQ14.

While we may have knowledge gaps when pursuing new opportunities, these gaps do not significantly, affect revenue performance. All participants recognized the existence of knowledge and capability gaps to some degree in technology, training, business processes, data analysis, or information capture. The K-G connection also supports the existence of knowledge gaps. However, based on the evidence, 72% of the participants self-rated their business performance as exceptional or exceeding expectations indicating business performance is primarily not impacted. Possible explanations for this inconsistency grounded in the literature are SBE leaders unintentionally underestimate the revenue potential of the business:

1. The lack of expertise to collect or analyze key market, industry, economic, or financial data to benchmark business performance over the business cycle (Elbanna & Naguib, 2009).
2. Because of the reluctance of employees to share potential new business opportunities for personal reasons (Wu et al., 2010).

3. Existing competitive advantages, while possibly eroding, are enough to support revenue growth expectations in the short-term (Porter, 1980).

In addition, other equally feasible explanations range from the magnitude of the knowledge gaps are irrelevant in their revenue-production efforts to an observation by participant 20, "… we are getting better, and better at what we do, we are fine-tuning everything".

We have met our revenue goals; therefore, we do not need to perform sophisticated business analysis or use performance benchmarks to manage the business. Given the findings, this is a reasonable conclusion given the evidence collected from participants. The SBE leaders established revenue goals using various methods, but irrespective of the approach, they employed minimal use of external economic forecasts, industry data, or performance benchmarks. The significance of business performance analysis as noted by Yeoman (2009) is data analysis provides a foundation to identify and execute profitable strategies and prevent erosion of competitive advantages.

While 14% of the participants reported declining business performance, the majority of the SBE leaders met or exceeded their revenue goals supporting the argument that business-benchmarking tools are unnecessary to monitor or optimize performance. The commingled effect rival explanation, as defined by Yin (2014), offers several possible explanations: (a) the impact of winning a disproportionately large contract (Baillon et al., 2012), (b) sales to existing customers exceeded expectations (Buono & Jamieson, 2010), or (c) the successful introduction of a new service may be masking

eroding competitive advantage (Jansen et al., 2011; Liberman-Yaconi et al., 2010; Rodrigues & Raposo, 2011). Fundamentally, the primary question is how would SBE leaders detect or proactively prevent erosion of competitive advantages, especially if knowledge gaps in technology or evolving customer needs are the cause of declining performance, without the capability benchmark performance.

From an operational perspective, formalized business processes and data analysis are irrelevant and create additional work without any tangible benefits. Small business leaders decide how to best employ their resources using the rationale that resources allocated toward revenue production is in the best interests of stakeholders, which is a credible conclusion because revenue production and profitability are ultimately the key drivers of the business. In addition, 72% of the business leaders reported they are meeting or exceeding their revenue-production goals. As noted in theme 3, informality is an efficient method of business operation for SBEs. Conversely, the capability to gather information about competitors and customer needs is essential to developing competitive strategies.

The significance of the absence of data analysis or formalized procedures becomes relevant in the event of a revenue decline. SBEs leaders may experience difficulties in several areas because (a) the lack of visibility into the declining quality of customer relationships from competitor actions (Soderberg et al., 2011), (b) the inability to predict or forecast business threats (Yoon & Kwon, 2010), or (c) the incapacity to implement timely risk mitigation strategies (Coghlan et al., 2010; Lee et al., 2011). This setting when viewed through the KBV lens, assumes that knowledge is the most

strategically significant asset available to a firm. Therefore, lack of knowledge or the ability to capture critical information will eventually affect business performance (Grant, 1996). Kiron and Ferguson (2012) also noted the growth of the knowledge economy is transforming how companies compete in the marketplace toward using analytics to manage the business. While exploration of the conditions that may cause revenue to decline is beyond the scope of this study, a reasonable assumption is SBEs that proactively manage their information acquisition and exploitation capacities have an advantage relative to SBEs reacting to business threats after the effects are evident.

The rival explanations described in this section denote possible reasons for discrepancies between the evidence, the literature, and the conceptual framework. Although not exhaustive, these explanations identify plausible alternative conditions to assist in interpreting the data collected from participants. In addition, the evidence and literature supports the complex linkage of resources, business processes, decision-making, and information processing which all link back to the research question as to how SBE leaders can determine when underperformance is because of capability gaps. The rival explanations covered in this section could form the foundation for future research studies.

Applications to Professional Practice

In business practice, companies employ strategies and tactics to create competitive advantages and if successful, exploit market opportunities to earn profits. However, as the marketplace and technology evolves, companies must adapt their strategies, practices, and procedures as well as expand their foundational knowledge to

remain competitive (Grant, 1996; Nickerson & Zenger, 2004). The purpose of this multiple case study was to explore the critical skills that leaders of SBEs need to detect or determine if business underperformance is because of knowledge gaps or deficiencies in knowledge management practices in their revenue-generating activities. The findings section contains the evidence collected from participants, analysis of the data, and interpretation of the results. In addition, the results offer insights into ineffective strategies, policies, and practices that may hinder the effective use of knowledge assets. Collectively, the results provide SBE leaders with recommendations to improve business performance in the areas of organizational learning, business processes, document management, decision-making, and absorptive capacity.

Most of the studies researching knowledge management practices focus on large firms. This study expands the body of literature for smaller companies (fewer than 25 employees) where the quantity and quality of resources which impose capability limits within the business. In recognition of these constraints, the recommendations for action are practical and implementable with a modest budget, which should remove a potential financial barrier and encourage adoption. The findings are relevant to business practice and the literature:

1. Organizational learning—value creation occurs upon conversion of tacit knowledge into explicit knowledge and shared throughout the organization (Curado & Bontis, 2011; Stahl et al., 2011; Sun & Anderson, 2010).
2. Business processes and document management—organizational routines and processes used to capture, understand, convert, and apply knowledge to create

value (Curado & Bontis, 2011; Jørgensen et al., 2012; Rasmussen & Nielsen, 2011; Thiel et al., 2012).

3. Absorptive capacity—investments in knowledge assets produce economic growth by improving organizational efficiency and productivity (Jiménez-Barrionuevo et al., 2011; Qian & Acs, 2011; St-Pierre & Audet, 2011).
4. Decision-making—value creating business decisions form foundation for creating competitive advantages (Jansen et al., 2011; Jørgensen et al., 2012; Zhang & Zhang, 2012).

In professional practice, business leaders may gain practical insights from the results of this study about how to identify, evaluate, and manage organizational knowledge assets. The results of this research may help managers identify knowledge and expertise gaps needed by the organization to remain competitive in an analytics-enabled marketplace. Based on the evidence collected, the recommended improvements in the business practices of SBEs could mitigate underperformance in core areas of the business. The recommendation for action section contains detailed explanations for each recommendation.

Implications for Social Change

Small business enterprises are an essential part of the global economy and a driver of economic growth. In fact, SBEs employ 46% of all private workers and make a significant contribution toward creating new jobs. Managers of SBEs face increased organizational and marketplace complexity while experiencing challenges attempting to maximize the use of unique knowledge assets. Advances in information and

communication technologies are driving business challenges and require investments in new skills and knowledge to reduce erosion in business performance.

The failure of SBEs has a harmful effect on society. The unfavorable effects range from (a) high unemployment rates, (b) slow economic activity, (c) increased government spending to stimulate job creation, and (d) rising stress related illnesses. Despite, government spending and support the failure rate for SBEs remains high. According to the SBA, high SBE failure rates are difficult to mitigate, in part, because of (a) working capital shortages, (b) poor management skills of business owners, and (c) ineffective sales and marketing strategies. Decreases in the number of business failures (see Table 1) can positively affect local economies, communities, company-sponsored charities, and the global economy. Therefore, reducing the failure rates of companies in this segment of the United States economy provides a strong incentive for exploring the KMPs of these organizations.

The recommendations covered in Section 3 may be valuable to small business service providers, governmental policy makers, consultants, and technology vendors. In addition, SBE leaders may gain insights into how to increase profitability by championing adoption of knowledge-based products and ideas into the firm. As an example, smart device applications allow collection of customer data through Internet connections to deliver analytics on customer preferences, competitor actions, and emerging business opportunities (Davenport & Prusak, 2011). Access to this data of this nature helps SBE leaders improve decision-making. This study may also provide some

visibility into why some firms are better at creating and sharing knowledge than others (Powell & Snellman, 2004).

Recommendations for Action

Scholars and business practitioners noted that SBEs are not fully benefiting from value creation opportunities associated with their intangible knowledge assets (Laihonen & Lonnqvist, 2010). SBEs have intellectual knowledge capital embedded in their employees (human capital), customer relationships (customer capital), and culture or organizational capital (Li et al., 2009; Liberman-Yaconi et al., 2010). The recommendations covered in this section describe methods for creating value from hidden, intangible knowledge assets.

The participants provided valuable insights into their knowledge management processes, procedures, and practices; including, their perceptions about the critical capabilities needed for future success. In addition, analysis of the evidence identified gaps that are the basis for the recommendations covered in this section. The recommendations are consistent with the RBV of the firm, meaning implementation is mindful of the budget, resources, and capabilities limitations of SBEs. The recommendations are not mutually exclusive; meaning each recommendation can stand separately or used in combination to address knowledge and capability gaps identified in this study. To address the knowledge gaps and knowledge management practices of small business enterprises, I recommend the following management actions.

Information Acquisition and Processing

The findings for theme 1 uncovered two challenges for SBEs. The first encompasses information acquisition as part of an opportunity qualification process and expanding the scale and scope of sales and marketing efforts. The second involves building and maintaining relationships with customers. The participants performed both tasks while engaged in other work related responsibilities.

The task of finding sources of high quality leads through various sales channels is an important challenge for SBEs. The discovery of new opportunities involved the personal efforts of the participants to initiate, parse, process, and store the information collected in their lead generation efforts. The participants noted this information was typically not shared or accessible by other staff members. SBEs can expand the capacity to capture information using automated agents driven by keywords or phrases to search industry publications, request for proposal services, public records, news sources, press releases, financial filings, website content, directories, really simple syndication (RSS) feeds, blogs, or any other electronic data repository. For example, SBE employees could create automated agents to gather information about prospects for lead generation, for existing customers, alerted about events that may representing emerging or missed opportunities, or notified of financial problems such as earning downgrades or possible bankruptcy speculation that may affect their revenue stream. The cost to access each source of information and engage services offering information agents is in a range affordable for SBEs.

This recommendation would improve the efficiency of information acquisition for employees engaged in sales and marketing roles by reducing time spent manually searching electronic databases, journals, magazines, and websites. This recommendation would enable heuristic searches as described by Nickerson and Zenger (2004). Heuristic searches are ideal for complex business problems such as revenue-production that rely on cognitive maps, contact with multiple internal and external sources of information, and knowledge transfer. Ideally, time invested in other value creating efforts would benefit the organization, which is critical in a resource-constrained environment.

Institute or Upgrade CRM Systems to Include Social Engagement

The second finding related to theme 1 concerns the importance of building and sustaining customer relationships as part of revenue generation. Revenue generation begins with information capture about opportunities, and on qualification, results in a revenue-producing transaction. However, relationship building is a labor-intensive activity, limited by the direct efforts of employees performing in roles responsible for revenue production.

The participants acknowledged that outbound marketing efforts were minimal resulting in a marketing footprint limited in scope and scale. Therefore, how can SBEs scale their relationship building efforts; personalize information about their services for each customer engagement channel, keep costs down, and institute effective feedback mechanisms to support relationship building with limited resources (Fensel et al., 2014). As noted earlier, the participants identified customer relationships as critical to the long-term success of the business; however, a capabilities gap was uncovered during data

analysis. Clearly, the evidence supports the relationship building practices used by the participants are successful relative to the resources applied. This recommendation offers opportunities for the participants to close the relationship building alignment gap.

Scholars have described social CRM as the integration of customer-centric activities and social media technologies (systems and processes) that cultivate stronger long-term relationships with customers (Trainor, Andzulis, Rapp, & Agnihotri, 2014). Drawing from the theoretical framework described by Fensel et al. (2014), social CRM capabilities simultaneously address issues of scalability, cost, channel personalization, and customer feedback as part of the relationship building process. Social customer relationship management (CRM) services help SBEs build customer relationships by allowing employees to engage customers in collaborative conversations, networks of association, and information sharing to promote retention and loyalty.

Social CRM platforms enable users to monitor, manage, follow discussion threads, respond, track, and engage customers through an expanding universe of social media channels such as LinkedIn, Twitter, and Facebook as well as providing traditional CRM tools. For example, Figure 12 contains a screenshot of the user interface of a social CRM platform. Once an employee finds a contact, relationship building choices become available: (a) historical interactions, (b) contact details, (c) social profiles, (d) documents, (e) topics of influence, (f) user generated notes, (g) status of leads, (h) email threads, (i) outstanding tasks, (j) invitations to join or follow a prospect, and (k) marketing automation.

In addition, once the system synchronizes with the contact address book, automated email messages and tasks creation prompt interaction with customers and prospects without the need for direct employee efforts to schedule interactions with clients. Social CRM platforms offer integrations with a variety of internet and computer applications to expand the scale and scope of relationship building. Social CRM platforms are the hub for all customer interactions and activity. Social CRM systems simplify relationship building with prospects and stakeholders by (a) engaging new followers, (b) discussion topic, (c) keywords, (d) Twitter mentions, (e) Facebook Likes, (f) job changes, (g) email interactions, or (h) automated workflow creation. When used as the primary email client, social CRM systems help users visualize the value of the customer relationship from multiple perspectives. Research by Trainor et al. (2014) found a statistically significant relationship ($p<.01$) between social CRM capabilities and customer relationship performance.

The benefit of this approach is to transform and expand passive account management, sales, and marketing activities into active engagement opportunities when not in direct contact with customers. Both recommendations may help SBEs improve the quality of relations with customers, enhance the lead generation process, and expand the scale and scope of their sales and marketing efforts. Deployment of this recommendation is low cost services and offered by subscription similar to Salesforce.com.

Create Value From Knowledge Assets With Document Management

The evidence confirmed that participants did not have a clearly defined document management process. As noted by business research scholars, when a company overtly

captures information, stores it in information repositories, and incorporates it into core business practices, value creation occurs (Curado & Bontis, 2011; Fiedler & Welpe, 2010; Liao, Wu, Hu, & Tsui, 2010). Based on the KBV of the firm and the conceptual framework for this study, information is the most critical asset in the firm. Information from the marketplace, CRMs, emails, business proposals, internal reports, and service quotations all contain explicit knowledge capital that has archival and business value. The lack of formalized procedures or infrastructure to capture this knowledge results in limitations where (a) information resides in unconnected silos, (b) finding critical information is difficult, and (c) knowledge transfer and learning occurs only through direct contact with the source, if known.

One method to capture explicit knowledge contained in digital assets is through a document management system integrated into daily business practices and employee activities. Document management systems track, store, and manage digital assets in almost any file format, including images and video. Because each document has a known location within the filing system, searches, sharing and linking information with employees, business partners and customers occurs more efficiently. In addition, information retrieval from the document repository supports problem solving, decision-making, and other core business processes.

The first step in setting up a document management system is to develop objectives and a process for employees to follow when archiving documents. On completion of the process mapping and goal setting steps, implementation of a document management system can range from a basic capability to a system integrated into the core

practices of the organization. For example, SBEs could begin archiving documents by establishing a shared drive accessible to all employees in a hierarchy of folders that contain different types of documents. This approach, while inexpensive to implement depends on compliance by employees, lacks indexing metadata to simplify information searches, does not ensure the most recent versions of documents are available, and may exclude other documents such as email.

The next step could include installation of a commercially available document management system hosted on internal or external servers. Document management systems are flexible platforms designed to integrate into enterprise software applications for word processing, spreadsheets, and business presentations.

This theme exposes the importance of a unified document management capability. The benefits of a document management system for SBEs could reduce the resources needed for routine activities such as developing sales proposals, promote shorter sales cycles, and improved decision-making. For example, analysis of past proposals could extract the characteristics of winning business strategies and pricing policies. In fact, one participant noted one of their objectives was not to leave money on the table when preparing price quotations. However, without the capability to retrieve key information and a process to analyze the data, it would be difficult for SBEs to detect capability gaps or business performance deficiencies.

Adopt a Process Management Oriented Mindset

The recommendations for using information agents to automate data capture, implementing a social customer relationship platform, and managing digital knowledge

assets using a document management system provide a sound basis for adopting a formalized process management system. While this study focused on the revenue-generating activities of SBEs, the benefits of process management extend to all core business processes within the organization. A business process is a series of steps used to create a particular outcome as shown in Figure 13.

Processes can be manual or automated. Each step is part of a formalized sequential procedure that has an input and output as part of the process mapping exercise. On completion of the process mapping procedure, SBE leaders can measure, analyze, and ultimately minimize omissions, deviations, or errors associated with each step in the process. For example, an automated document management process will not allow storage of certain materials without adding the designated metadata to the file. Similarly, in a relationship management process, without the capture of accurate information about a prospect the process cannot advance to the next step. In both cases, an automated process management system can prevent certain types of errors from occurring.

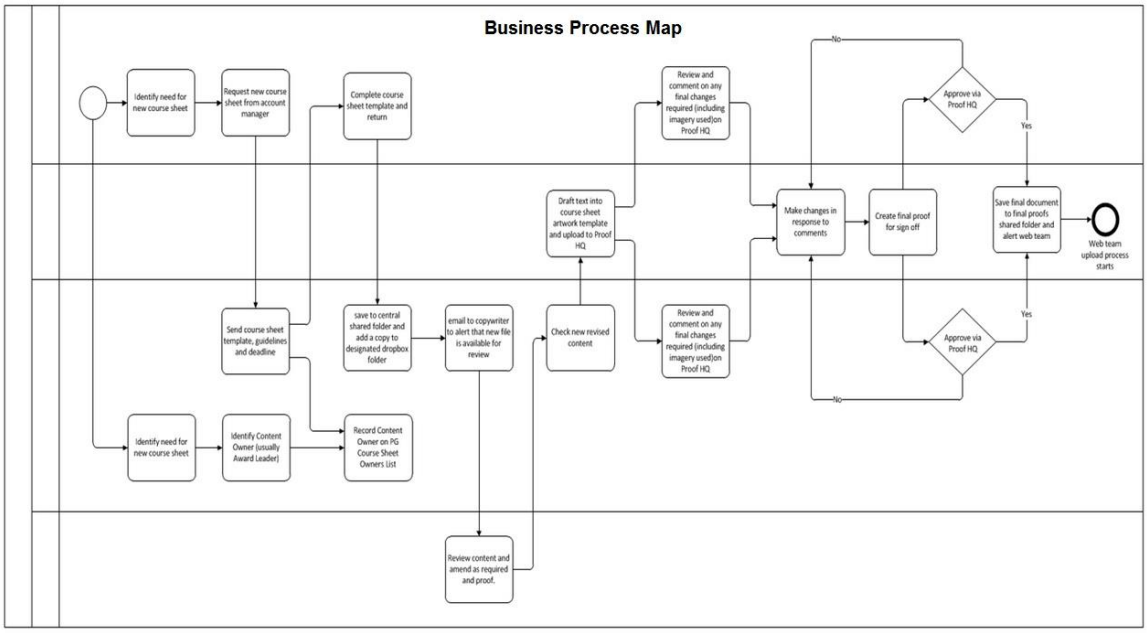

Figure 12. Business process map illustration. Developed by author.

Automated process management systems can reduce variations in business processes, improve productivity, and increase the efficiency of knowledge assets using business rules. For example, a customer engagement workflow could trigger a series of events when a website visitor completes an online form to send emails, build customer contact schedules, and enter contact information into the CRM system.

Execution of customer engagement actions occur automatically before the salesperson makes initial contact with the prospect reducing or eliminating manual effort for routine activities. The primary benefit of process management and automation is to improve the efficiency of knowledge assets. Replication of the process mapping procedure across key processes throughout the organization would reduce the time employees are spending on nonvalue added activities, decrease variation in problem

solving and decision-making, improve knowledge transfer, and minimize risks associated with knowledge sharing hazards.

This recommendation supports the findings where participants expressed a desire to institutionalize their operations. Instituting a process management orientation throughout the organization is a unifying theme for this study; each recommendation has a process management component applicable to relationship management, information acquisition, business processes, and documentation management. The benefit of this recommendation will allow efficient use of knowledge assets, unlock value hidden in knowledge assets, and increase the absorptive of capacity of the organization.

Change Management

The central research question in this study was whether business leaders could detect or determine if underperformance from a broad perspective were because of gaps in knowledge or business practices. Scholars and business practitioners agree that SBEs are not fully benefiting from actively employing knowledge management practices (Laihonen & Lonnqvist, 2010). The findings of Li et al. (2009) revealed the working environment and culture are key factors for workplace learning and creating an effective learning environment. Liberman-Yaconi et al. (2010) studied decision-making by leaders of small business, but recognized that knowledge acquisition and information processing capacity were topics requiring further research. Therefore, to achieve maximum benefit, all levels of the organization need alignment between the strategic intent of the business leader, the business infrastructure (methods and systems), and the daily practices employees perform. While alignment is a shared responsibility of the entire organization,

a business leader must champion and drive change in the organization. The evidence collected supports that SBE leaders cannot detect or determine the degree to which the inefficient use of knowledge assets affects revenue production without tools to measure performance in the main areas of the business.

This recommendation is the most challenging because it requires a change in the mindset of the business leader. The leader must look beyond the way the company currently operates and invest in mainly intangible knowledge assets with benefits realized in the future. This recommendation reinforces the need for SBE leaders becoming an active change agent for the organization, meaning they must value and invest in employee training (absorptive capacity), institutionalizing business practices (process management orientation) and implement metrics to monitor performance (performance management).

The prior recommendations offer several starting points for SBE leaders to begin the organizational change process in the areas of relationship building, information acquisition, document management, and process management. These recommendations are interrelated and offer SBEs the opportunity to improve business performance through the benefits enabled by adopting knowledge-based business practices. However, SBE leaders should be mindful that benefits from investments in knowledge assets are intangible in some areas and measurements or direct linkage to performance enhancing capabilities may be difficult to quantify.

The ideal method to disseminate the study results and recommendations is through publications and conferences targeted on challenges SBE leader's experience in

managing their businesses or business leaders interested in forward-looking methods to improve business performance. In addition, the results when incorporated into training, mentoring, and entrepreneurial programs could help new business owners reduce early sources of business failure by identifying the essential knowledge and capabilities needed for success. Small business leaders, employees, and business partners of SBEs are the primary beneficiaries of these recommendations.

Recommendations for Further Study

The critical capabilities leaders of SBE need to detect or determine if knowledge gaps affect revenue performance has research foundations grounded in the literature related to

1. managing knowledge assets,
2. absorptive capacity of employees and the organization,
3. information processing,
4. knowledge retention and reuse (organizational learning),
5. the use of documented or at a minimum standardized business processes,
6. decision-making approaches, and
7. performance management.

However, the influence each of these factors (independent variables) has on revenue performance (dependent variable) is unknown. Future research could examine the statistical relevance of each variable and the relative weight each variable has on revenue performance. A study of this nature could help SBE leaders establish a priority

list for assigning resources to minimize gaps in knowledge or improve business practices that affect revenue performance.

A second recommendation for future research is to build on the findings of this study using research on absorptive capacity to gain a better understanding of how SBEs convert their unique business or industry knowledge into value (Jiménez-Rodríguez, 2012; Lichtenthaler & Lichtenthaler, 2009; Qian & Acs, 2011). Unfortunately, no reliable instrument exists to measure absorptive capacity (Jiménez-Barrionuevo et al., 2012). However, a qualitative investigation into the practices, resources, and systems used to create value would (a) help business practitioners and SBEs leaders uncover gaps in core competencies, (b) support developing profitable business strategies, and (c) guide investments in employee training and skill development to increase the absorptive capacity of the organization.

The final research recommendation proposes using a mixed methods research methodology to explore the information processing capabilities of SBEs. Knowledge, information, and data quality are critical inputs into decision-making and problem-solving (Nickerson & Zenger, 2004). Knowledge created from information processing is largely the result of a mental act by an employee combining new information their existing knowledge (Savolainen, 2009). Therefore, observing how participants process information in various business settings would offer additional insights into the value of intangible assets.

Increasing the number of participants would reduce uncertainty by (a) discovering the most relevant information needed to perform a particular job role, (b) identifying

methods used to verify information, (c) documenting pathways of information distribution, and (d) gaining a deeper understanding of the link between opinions about how information quality affects organizational success. Using the expanded results of this study coupled with context rich environmental factors such as cultural (Pinjani & Palvia, 2013), emotional (Maitlis et al., 2013) and information overload (Jørgensen et al., 2012; Thiel et al., 2012) could allow researchers to quantify the loss of valuable information from filtering, rejection, omission, abstraction, synthesis, and queuing.

Reflections

The purpose of this study was to explore a broad range of topics surrounding the knowledge management practices of SBEs. I had no preconceived notions about the business practices of SBEs other than recognizing resource constraints existed. However, I did have thoughts about the critical nature of managing knowledge assets consistent with the KBV of the firm based on my professional experience (Nickerson & Zenger, 2004; Nickerson, Yen, & Mahoney, 2011; Rodrigues & Raposo, 2011).

The study results show that SBEs have opportunities to improve business performance using the KBV of the firm, in the areas of information acquisition, document management, and business processes. The evidence also indicates that complex hidden variables may be influential in SBEs performance and requires mixed methods research methodologies to uncover the key variables and relationships. Despite the challenges noted, the evidence collected provides valuable information for SBE leaders, business practitioners, and future researchers.

This study deepened my understanding of the value and difficulty of scholarly research. For example, I understand the importance of developing a data analysis plan, prior to data collection, especially when a large amount of data collection occurs. Finally, the depth and quality of the literature review is an invaluable tool to guide researchers when conducting research and reporting findings.

Summary and Study Conclusions

The purpose of this study was to explore the knowledge management practices of SBEs. The central research question sought to determine the critical capabilities that leaders of SBE's need to detect or determine when underperformance in revenue production was because of gaps in organizational knowledge or business processes related to managing knowledge assets. The participant firms consisted of SBE's with less than 25 employees located in the northeast and west.

The four main themes uncovered in this study were (a) the opportunity identification methods used by the participants is effective, but limited in scale and scope; (b) document management practices impedes value creation from intangible knowledge assets; (c) process orientation extends benefits across the entire organization, and (d) misalignment exists between the critical success factors and capabilities of the organization. Each theme reinforces the evidence that opportunities exist for SBE leaders to improve performance or mitigate eroding competitiveness by adopting a KBV of the firm mindset in critical areas of the business. The significance of the study results show that an expanding gap between organizational capabilities, customer needs, and the marketplace could erode competitive advantages and ultimately result in business failure.

The participants felt that customer relationships were important in their revenue-production efforts, noted the need to institutionalize business practices, recognized gaps in their knowledge, and acknowledged limited use of performance data to monitor performance. The analysis of the evidence also uncovered a misalignment between critical success factors and current capabilities. Unanimously, the participants agreed that gaps in knowledge, processes, or practices existed in their organizations. However, the challenge for SBE leaders is to become agents of change within their organization, while challenging for small companies with resource constraints, the benefits are substantial.

The recommendations presented in this study may improve performance in the areas of information acquisition, customer relationship management, business processes, and document management. The targeted beneficiaries of this research include leaders of SBEs, business practitioners, consultants, and providers of knowledge based services. Finally, this study expands the literature on the management practices of small firms, offers evidence that SBEs with less than 25 employees can benefit from investment in knowledge assets, and knowledge based management practices can improve performance in core areas of the business.

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Appendix A: Informed Consent Form

You are invited to take part in a research study exploring the knowledge management practices of small businesses. You were selected for this study because of your experience and level of community involvement in the key processes directly or indirectly of selling or providing services to your customers in sales, marketing, finance, customer service, or management). This form is part of a process called ―informed consent to allow you to understand this study before deciding whether to participate.

A researcher named Orlando G. Skelton, who is a doctoral student at Walden University, is conducting this study. He will use the research data collected to explore the knowledge management practices of service oriented small business enterprises.

Background Information

This purpose of this study is to discover how SBEs acquire, process, store, retrieve, and share critical information to improve business performance. The target survey population will consist of employees working in sales, marketing, customer service, financial, and leadership positions at purposely-selected SBEs with less than 25 employees in the northeast and west.

Procedures

If you agree to participate in this study, you will be asked to:

- Participate in an individual interview regarding your daily job functions and participation in key customer-facing business processes such as preparing sales proposal, solving customer related problems, and gathering competitive information from the marketplace.

- Provide examples of sales proposals, common business reports, and demonstrations of software programs, and a tour of the facility.

All interviews will be audio taped to facilitate future data analysis.

Voluntary Nature of the Study

Your participation in this study is voluntary. This means that everyone will respect your decision of whether or not you want to participate in this study. No one will treat you differently if you decide not to participate. If you decide to join the study now, you can still change your mind at any time during the study and discontinue participation.
If you feel stressed during the study, you may also discontinue participation at any time. In addition, you may skip any questions that you feel are personal.

Risks and Benefits of Study Participation

The interview will take approximately 45 minutes to complete and will involve a detailed discussion of your daily experiences, processes, and procedures related to how you acquire, process, store, retrieve, and share information in your organization. This study may benefit employees and business leaders/owners of small business by learning how to recognize and utilize knowledge assets more productively to improve business performance.

Compensation

No compensation or incentives will be offered. However, participants will be provided an electronic copy of the final report upon request.

Confidentiality

Any information you provide will be confidential. The researcher will not use or share your information for any purposes outside of this research project. In addition, the researcher will not include your name, the name of the company, or any other information that could identify you in any reports of the study.

Contacts and Questions

You may ask any questions you have now or if you have questions later, you may contact the researcher via telephone (XXX-XXX-XXXX) or email (**TBD**). If you desire to talk privately about your rights as a participant, you can call Dr. **[TBD]**, who is the Walden University representative for academic research. **[His/Her]** telephone contact number is **[TBD]**, extension **[TBD]**. Walden university approval number for this study is **[TBD]** and it expires on **[TBD].**

A copy of this form will be provided to you for your records.

Statement of Consent

I have read the above information and I feel I understand the study well enough to make a decision about my involvement. By signing, you agree to the terms described in this document.

Printed Name of Participant: _____

Date of consent: _____

Participant‘s Written or Electronic* Signature: _____

Researcher Written or Electronic* Signature: _____

Electronic signatures are regulated by the Uniform Electronic Transactions Act. Legally, an "electronic signature" can be the person‘s typed name, their email address, or any other identifying marker. An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically.

Appendix B: Letter of Cooperation Example

[Community Partner Contact Information]

[Date]

Dear Orlando,

Based on my review of your research proposal and the written approval (attached) of the Walden University Institutional Review Board (IRB), I give permission for you to conduct the study entitled "Exploring Knowledge Management Practices in Service-Based Small Business Enterprises" on our premises or through teleconferences with our employees. As part of this study, I authorize you to conduct audio recorded interviews, collect data, and engage in follow-up discussions with our employees related to their interview responses. However, each individuals' participation in the study will be voluntary and at their own discretion.

We understand that our organization's responsibilities include providing a conference room to conduct the interviews (if needed) and authorize employees to participate in the study on a date and time that is convenient to our organization. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting.

I understand that the data collected will remain confidential and not provided to anyone outside of the research team without our prior written authorization and the permission of the Walden University IRB.

Sincerely,

[Community Partner Signature]

Walden University policy on electronic signatures: An electronic signature is just as valid as a written signature as long as both parties have agreed to conduct the transaction electronically. Electronic signatures are regulated by the Uniform Electronic Transactions Act. Electronic signatures are only valid when the signer is either (a) the sender of the email, or (b) copied on the email containing the signed document. Legally an "electronic signature" can be the person's typed name, their email address, or any other identifying marker. Walden University staff will verify any electronic signatures that do not originate from a password-protected source (i.e., an email address officially on file with Walden).

Appendix C: Data Collection Instrument for Individual Interviews

Date:	_____	
Case Classification:	___	(1, 2, 3)
Job Function:	___	(BL, CS, F, M, S)
Participant Code:	___	(1 – 20)
Recording Method	___	(R, H)

Central Research Question: The primary research topic in this study is: What are the critical capabilities that leaders of SBEs may use to detect or determine when underperformance in revenue-generating activities is due to gaps in organizational knowledge or business practices related to managing knowledge assets?

Background/Profile Questions:

1. What is your title and job duties/responsibilities?
2. How long have you performed in this position?
3. What other positions have you held in your current or other organizations?

Interview Questions:

1. What is the most valuable information needed to perform your job function with respect to supporting revenue-generating activities?
2. What are the source(s) of information?
3. Why do you use these sources of information?
4. What are your perceptions about the quality of the information received from each source? What methods do you use to verify the validity of this information?
5. How does the information you collect flow through the organization?
6. What training programs, seminars or conferences have you attended in the past 12 months?

7. What are your perceptions about how the quality of information you acquire affects organizational success in generating revenue?
8. How do you find out if opportunities to increase revenue have been missed?
9. How are revenue goals or objectives established?
10. How would you characterize your performance in meeting those goals over the past 3 years?
11. What training, if any, do you need to be more effective in your job function?
12. What tools does the company use to manage sales or other revenue-generating activities?
13. How are decisions made to pursue or pass on potential revenue-generating opportunities?
14. In your opinion, what organizational capabilities are critical to the long-term success of the company?
15. Do you have any additional information or comments to add to our discussion?

Appendix D: Certificate of Completion—National Institutes of Health

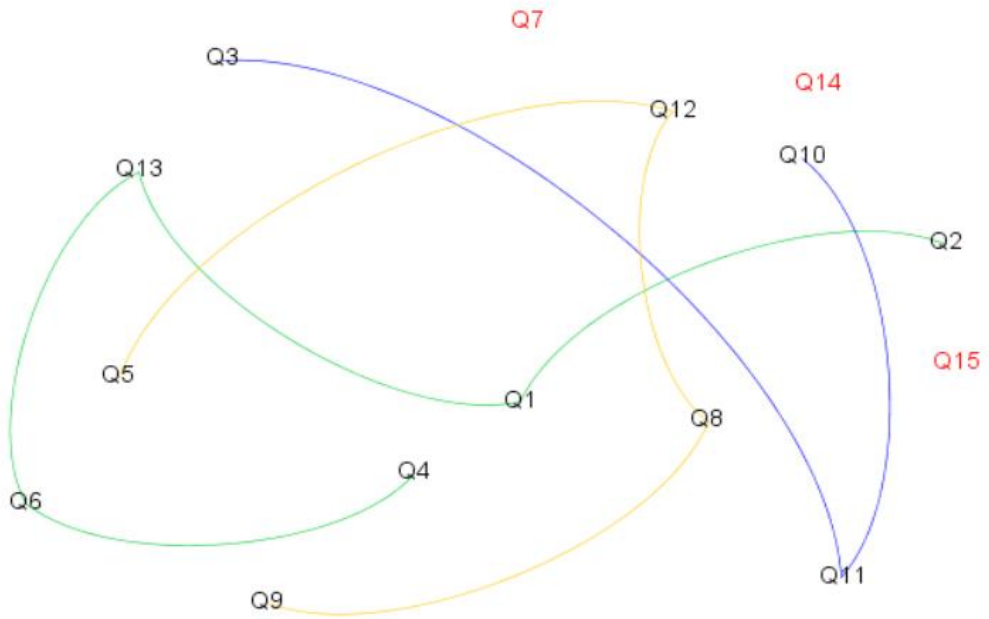
Certificate of Completion

The National Institutes of Health (NIH) Office of Extramural Research certifies that **O Skelton** successfully completed the NIH Web-based training course "Protecting Human Research Participants".

Date of completion: 11/12/2010

Certification Number: 568973

Appendix E: Cluster Analysis Findings



Cluster analysis findings grouped by keyword similarity. Legend: Green = Cluster 1; Yellow = Cluster 2; Blue = Cluster 3; Red = Cluster 4. Source: Developed by author.

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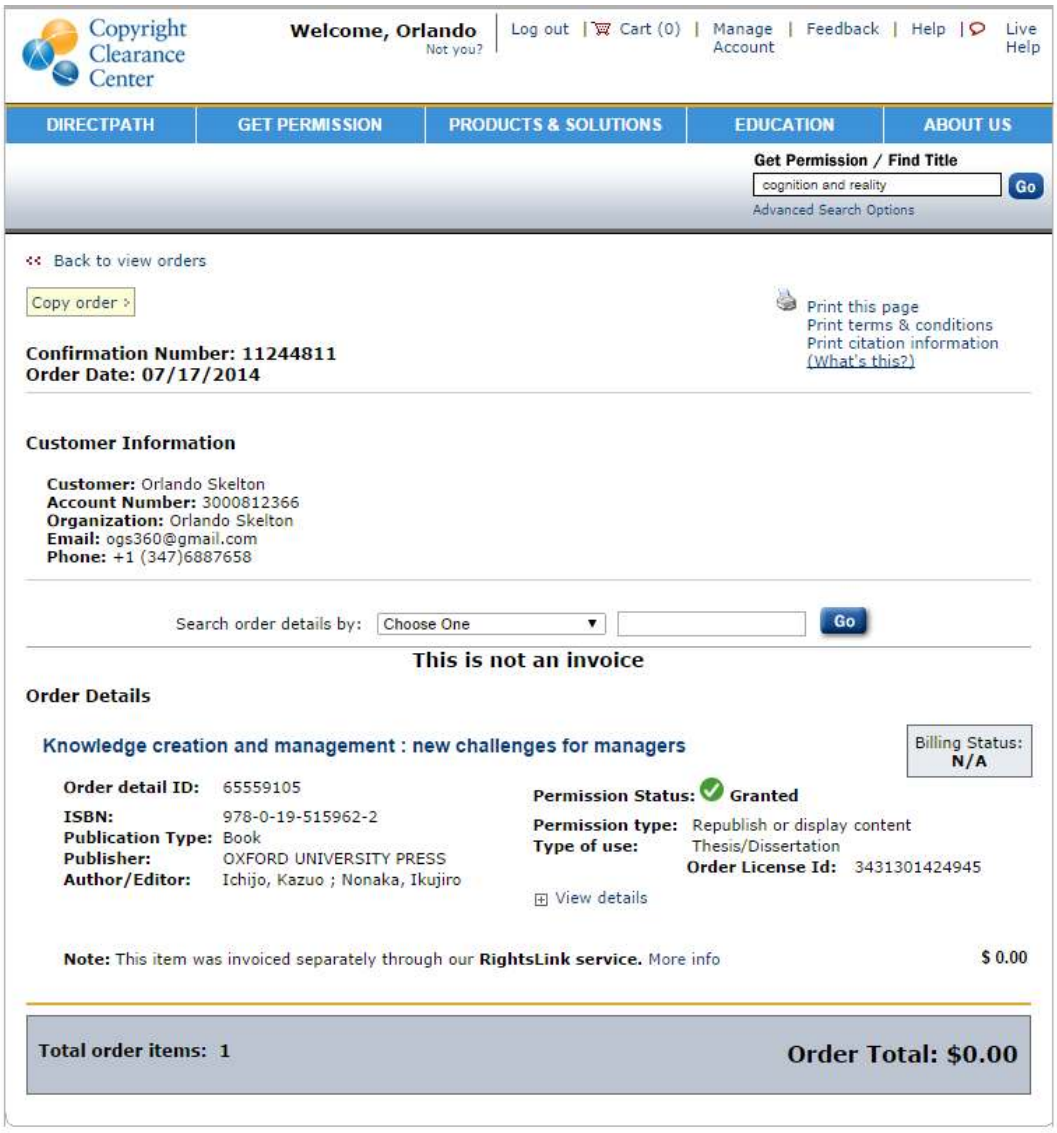

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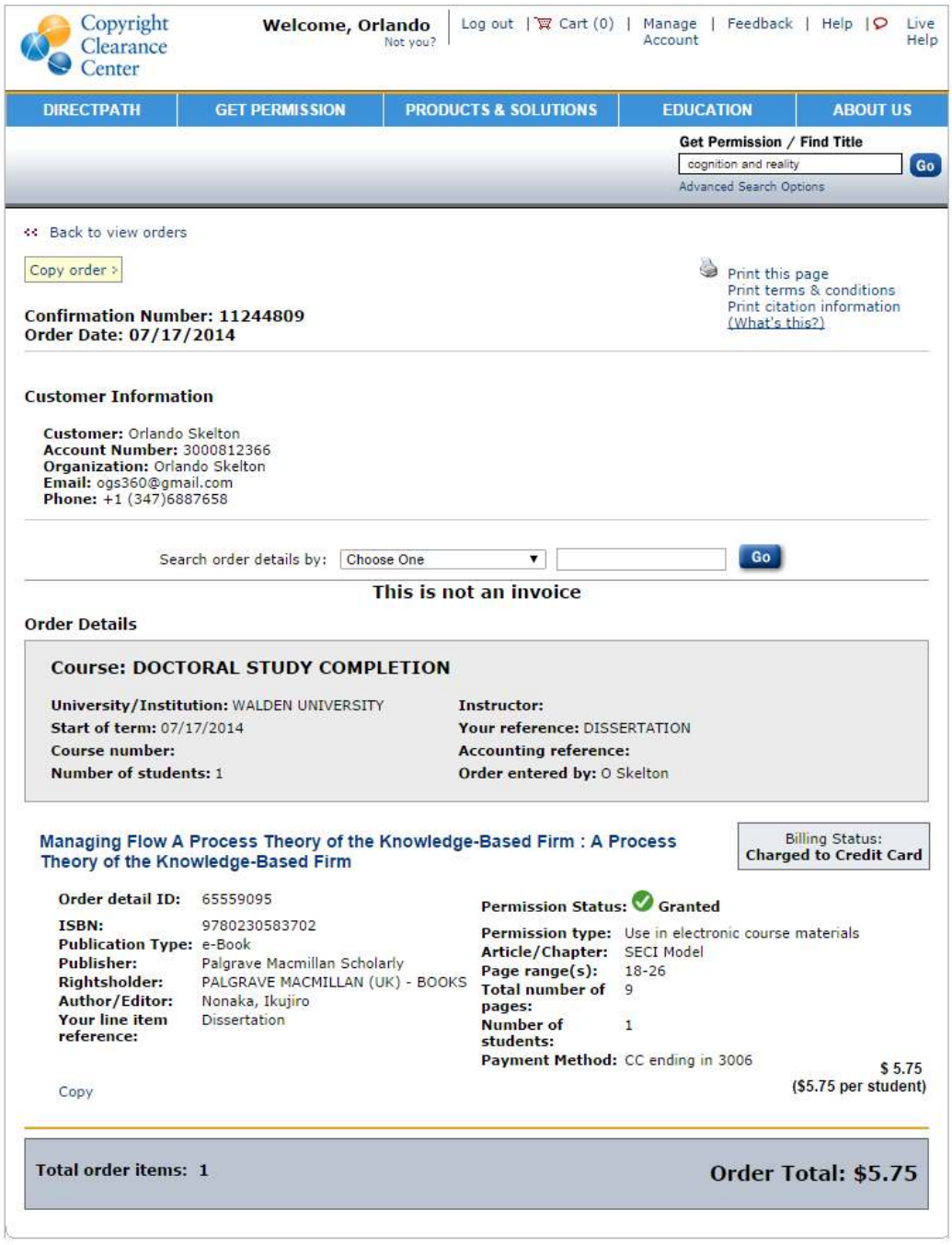

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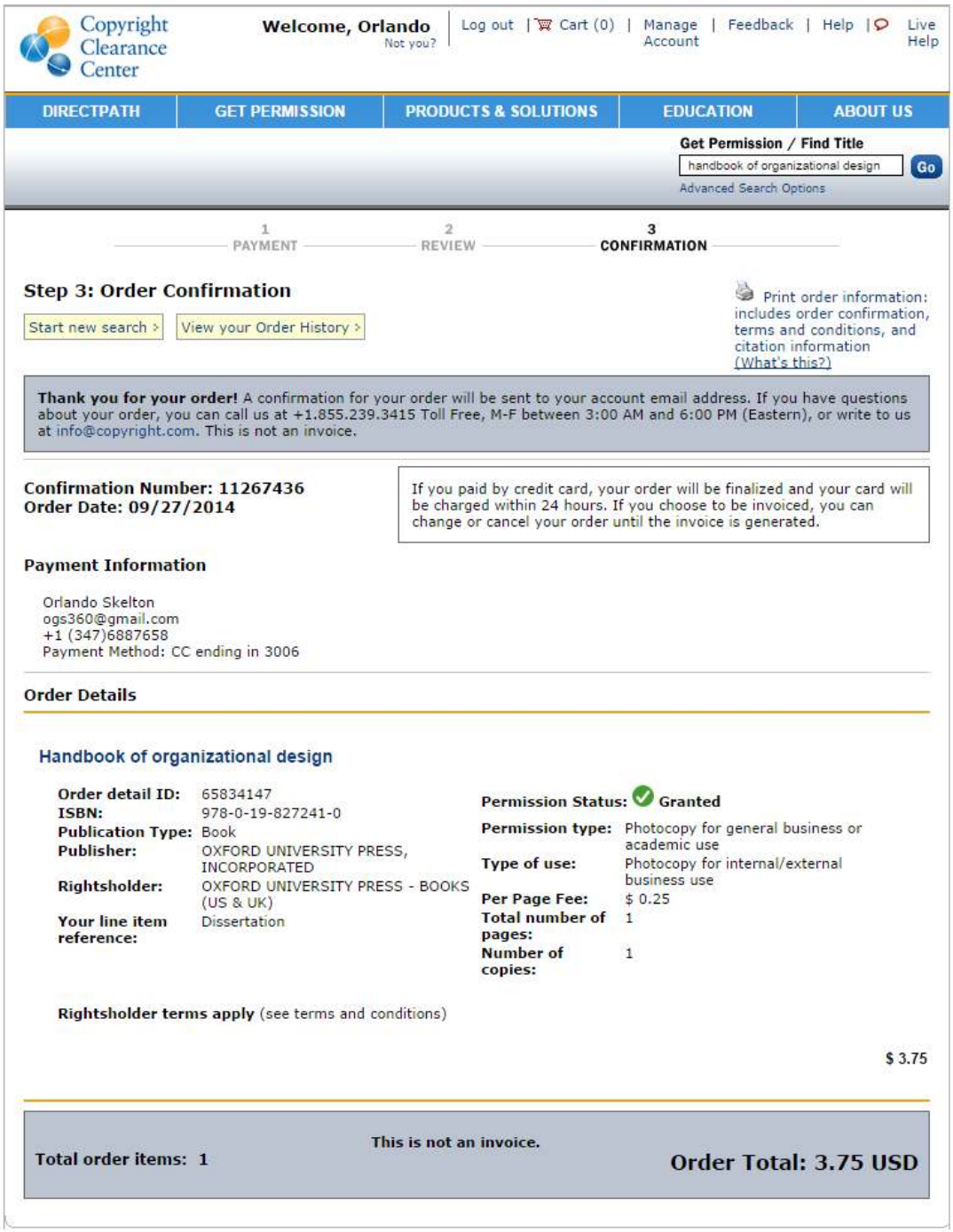

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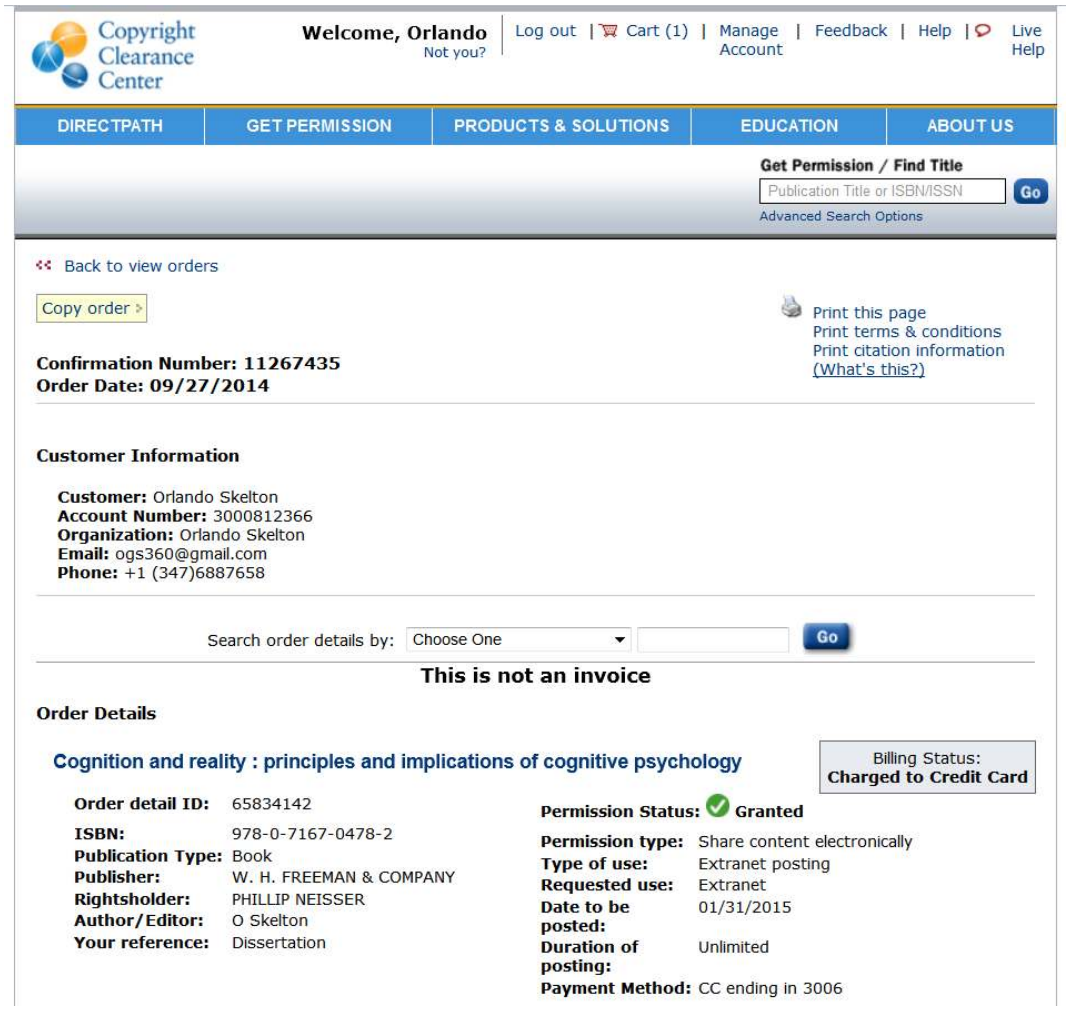

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