12-2018

Knowledge Sharing Matters: A Mixed Methods Study on Knowledge Practices Among University Presses

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Recommended Citation

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Suzie Allard, Major Professor

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Knowledge Sharing Matters:

A Mixed Methods Study on Knowledge Practices Among University Presses

A Dissertation Presented for the
Doctor of Philosophy
Degree
The University of Tennessee, Knoxville

Pui-Yi Judy Li

December 2018

DEDICATION

This dissertation honors my beloved parents for all their love, the sharing and transfer of their explicit and tacit knowledge, and their hard work in a small business to provide six great children with a better life. They were my role models for rising above difficult circumstances in life, always being positive and having the courage to move forward. I would also like to dedicate this research project to my grandmother, who saved and adopted a World War II orphan toddler (my father), even when she barely made ends meet. Without her, I would not be here.

ACKNOWLEDGEMENTS

ABSTRACT

Knowledge sharing in an organization helps improving its organizational performance (Walczak, 2008). Knowledge flows from various sources in various ways (Ahmed & Ahsan, 2014). Without effective knowledge sharing among employees, organizations cannot remain competitive in the ever-changing environments they face. The capturing of knowledge and human capital management are strategically important in a climate of retiring baby boomer workers and millennial workers' behavior of working for a short term with each employer (Liebowitz, 2008).

This study adapted Brenda Dervin's Sense-Making Metaphor and Weick's Organizational Sensemaking Theory to identify and explore the current knowledge-sharing practices of university presses. Since 2016, the not-for-profit university publishers have experienced alarming declines in their sales data and are struggling for survival. Acquiring an understanding of their current knowledge practices is a productive first step in their strategic planning process. It is time for university publishers to reinvent themselves strategically. This research used a sequential mixed methods study to collect quantitative and qualitative data. Quantitative data were gathered using a five-issue survey of university press employees. Qualitative data were gleaned from interviews of university press directors to understand top management's perceptions of their organizations' knowledge sharing practices. A major finding of this study is that the information behavior of the members of the university press organizations is strongly tied to social norms. Implications for knowledge management studies in Information Science contexts are discussed, and recommendations are made for future research.

PREFACE

Cognition, the tacit knowledge, is acquired through our natural instincts, beginning at birth and extending across our entire lives. Human beings are social animals by nature. It is only human beings, separate although still a part of the animal kingdom, who have a nature that distinguishes them from other species, by sharing explicit knowledge in all sorts of forms.

This dissertation in Information Science aims to explore how human beings share their explicit and implicit knowledge. In terms of the frequency of our constant interactions with it, knowledge is like oxygen that we inhale every second. In fact, a famous author's saying summarizes it nicely:

"Knowledge is of two kinds. We know a subject ourselves, or we know where we can find information on it" – Samuel Johnson

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CHAPTER ONE

INTRODUCTION

Background of the Study

The importance of having knowledge has been accepted and appreciated ever since the philosopher Francis Bacon's saying "Knowledge is Power" first became popular in 1597. In fact, knowledge is now considered to be one of the important resources (Little & Ray, 2005; Jashapara, 2004) and the centerpiece of the survival and success of many organizations (Kluge, Stein & Licht, 2001). The concepts *knowledge-intensive firms* and *knowledge workers* appeared when economies and industries became more information and knowledge driven (Hislop, 2005). Workers' "know-how" (i.e. human capital) is recognized as the one of most valuable assets of an organization and is the essence of innovation and profitability (Giddens, 1979).

The concepts of capturing human capital became formalized through the techniques of knowledge management (KM), which emerged as an established scientific discipline in the early 1990s (Nonaka, 1991). Knowledge management is an interdisciplinary endeavor, and spans the fields of Business Administration, Information Systems, Management, and Information Sciences (Alavi & Leidner, 1999). The management of knowledge involves the process of capturing, developing, sharing, and effectively using organizational intellectual assets to enhance the organizations' competitiveness (Davenport, 1994).

The concept of Saunders' Research Onion (2009) was used to map out the framework design for this dissertation. The Research Onion concept (Diagram 1) is adaptable for almost any type of research methodology and functions well in a variety of contexts (Bryman, 2012). This framework provided the researcher with a useful road map to walk through the layers in sequential steps, enabling the construction of a research design that would reflect the research objectives. In

general, the research philosophy and process were defined through the researcher's lens and were shaped by the nature of the research questions to be investigated. This technique led to the methodological choices in selecting the appropriate research approach (deductive or inductive, single-method or mixed-methods). Then, the research strategy for how to address or answer the research questions was designed. Next, the fourth layer identified the time horizon for collecting the data. The final stage identified the appropriate data collection methods. In this way, the onion metaphor sprouted into a series of stages through which an original methodological study was designed and described.

Statement of the Problem

Scholarly literature has confirmed that a positive correlation exists between a firm's performance and that organization's capacity to convert knowledge into value (Giju et al., 2010; Grant, 1996). The maintaining of organizational knowledge as a valuable intellectual asset is a driving force for innovation and competitiveness in a knowledge-based economy (Giju et al., 2010). Knowledge asset management provides small businesses with a competitive advantage for their survival and growth (Omerzel & Antoncic, 2008).

However, few empirical studies exist in the scholarly literature that identify the factors influencing knowledge management adoption in small businesses (Finkl & Ploder, 2009). The knowledge management literature situated in small organizational environment is relatively scarce, and is mainly centered on their practices related to competing in the market, rather than on the improvement of their internal efficiency (Sparrow, 2001). Therefore, there is a growing need for the analysis of knowledge management practices within networked small business enterprises (Valkokari & Haelander, 2007).

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Reaping the benefits of sound knowledge management practices is particularly important for not-for-profit small business organizations such as university presses. University academic presses play an important role as disseminators of the best scholarship from their faculty and from affiliated scholars. With the rising trends of electronic books and open access scholarship in the publishing industry, university presses are experiencing decreasing book sales and are facing the challenges of competition from commercial publishers. An investigation of how effectively the employees of university presses share organizational knowledge internally, can provide the presses with a foundation for self-assessment in choosing their survival business models.

Purpose of the Study

The purpose of this mixed methods study with a sequential design was to examine the behavioral, cultural, social and technological aspects that affect knowledge practices in small knowledge-intense firms such as university presses. The research also identifies the methods and tools they use in sharing and curating knowledge. An understanding of these aspects and their interactions with internal knowledge flows and innovativeness can help to provide a foundation for the creation of a future small business self-assessment tool design, for evaluating and improving knowledge practices.

Significance of the Study

People interact through communication processes to create and share information, in order to reach a mutual understanding (Roger, 1995). Organizations are comprised of structured groups of interacting people who are tasked with specific responsibilities that serve the organization's mission and goals. Even for smaller organizations, the communicative interaction that must take place between the organization's individual members, to create shared understandings, become far more complex when they are amplified on a group rather than an individual scale. These

communicative interactions are the channels through which information and knowledge can be shared among the members of an organization. However, few companies, especially among smaller businesses, have the means to capture employee knowledge and store it in a way that makes it easily accessible to members of the organization who might need it to inform their own work. Organizations put themselves at risk without having a knowledge management system, particularly in this era when there is a high level of workforce turnover, as baby-boomers in the workforce are retiring. Organizations clearly need to consider their processes for capturing and storing the vital knowledge and experience baby-boomer workers have amassed.

Strategic human capital management has become even more essential as many organizations are experiencing a "knowledge bleed," from not only the retiring baby-boomer workers, but also from the millennial workers' tendency to have a short work lifespan with each of a series of different employers, making frequent job changes (Liebowitz, 2008). Without a knowledge management system in place, organizations put themselves at risk of brain drain, especially as the generation gap widens and they find themselves with an impending talent vacuum (Rigoni, B. & Adkins, A., 2015).

This research was designed to gain insight into the current knowledge management practices of a small, knowledge-intensive firm environment, particularly regarding knowledge-sharing practices and knowledge-sharing barriers. An understanding of the behavioral, cultural, social and technological aspects of managing their knowledge would provide a foundational background for the development of a small-scale business enterprise self-assessment knowledge management auditing tool.

An understanding of the social-cultural aspects of businesses is important, because the success of a knowledge management system does not rely on technology alone (EIU & Cisco

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System, 2006). Culture influences behavior and may subdivided into cultural subsystems or aspects (Gastil, 1961). The social-cultural aspects of knowledge and the technology need to be balanced in order to have a successful knowledge management system (Bhatt, 2001). A knowledge management tool cannot be implemented by itself to achieve success, without considering cultural issues (Davenport & Prusak, 1998).

Scope of the Study

Research is a process of discovery (Collis & Hussey, 2009) and the objective of this research was to discover and understand the behavioral, social, cultural and technological factors that impact employees' and managers' knowledge practices in the scholarly publishing sector, particularly in knowledge-intensive firms like university presses. In order to have a more in-depth and comprehensive study of this phenomenon, a comparison of these aspects from both a quantitative perspective on the employee level and from a qualitative perspective on the management level was conducted. This mixed methods study provided the opportunity to understand their knowledge practices from both top-down and bottom-up angles.

Organization of the Study

This dissertation is organized in five chapters covering three working phases: theoretical work, field work and the evaluation and conclusion (see Figure 1 – *Overview of the Phases for this Research*). Chapter One has introduced the entire research study in a summary form, including the background for the study as well as the significance of this research in the field. Chapter Two presents the review of relevant literature from the fields of Communication/Information Sciences and Organization Science. In addition, Chapter Two explicates the theoretical foundations for the study, which are Dervin's Sense-Making Theory and Weick's Organizational Sensemaking Theory. Chapter Three explains the research methodology used to conduct this study, the rationale

for the research design choices and specific procedures for the data analysis. Chapter Four presents the findings from each portion of the quantitative and qualitative data collection and integrates the two datasets to identify any convergence or divergence. Chapter Five provides a discussion of the significance and implications of the findings, and concludes with recommendations and suggestions for future research.

PHASE 1 – THEORETICAL WORK

Research Problem (Chapter 1)

Research goals (Chapter 1)

Literature Review on Communication / Information Science, Organization Science (Chapter 2)

How Theoretical framework ties to Research Questions (Chapter 2)

Research Methodology Mixed methods approach (Chapter 3)

PHASE 2 – FIELD WORK

Research Design: Mixed Methods Sequential Design QUAN + QUAL

Quantitative method (QUAN) & Data Analysis survey: self-selected sampling, close/open ended questions to employees of University Presses with AUP (Chapter 3)

Qualitative method (QUAL) & Data Analysis semi-structure Interview: purposeful sampling, critical incidents techniques, open-ended questions to Directors of University Presses with AUP (Chapter 3)

PHASE 3 – EVALUATION & CONCLUSION

Discussion, Conclusions, Limitations, Lessons Learned recommendations (Chapter 5)

Findings / Evaluation, Interpretation / analysis on knowledge practices of University Presses, (Chapter 4)

Figure 1 - An Overview of the Phases for this Research

CHAPTER TWO

REVIEW OF THE LITERATURE

In this chapter, the basis for the theoretical framework for this study is addressed by a discussion of the linkage between relevant theories and the research questions used to guide this research project. It is then followed by a review of the existing literature on these theories in two main strands: Communication/Information Science and Organizational theories. The literature review further develops the foundation that supports the research questions and illuminates the new area for exploration that this research addresses.

Theoretical Orientations Related to Research Questions

A theoretical framework is the use of a theory to explain an event or to shine light on a particular phenomenon or research problem (Fox & Bayat, 2007). Having the guidance of theoretical frameworks, the researcher gains an integrated understanding of issues in order to address each specific research problem (Imenda, 2014). Theories contribute to the selection of appropriate research methods because "producing methodological fit depends on the state of relevant theory at the time the research is designed and executed" (Edmondson & McManus, 2007, p. 1158). This study uses both Communication/Information Sciences and Organization Science theories to guide the research.

Dervin's Sense-Making Theory from the disciplines of Communication and Information Sciences, and Weick's Organizational Sensemaking from Organization Studies were used for the theoretical framework. In brief, Dervin's Sense-Making Theory (1983) describes the process of how individuals engage in internal cognitive sense-making, shaped by elements of their individual experience, when attempting to make sense of observed data and information. This theory is directly relevant to RQ1, which aims to understand how individuals seek out knowledge and

experience knowledge barriers, to use Dervin's metaphor from her theory.

Weick's (1995) Organizational Sensemaking was selected to guide the portion of this research that addresses knowledge diffusion in the environment of the firm, specifically university press organizations. These theories provide a framework for RQ2 to understand how knowledge is being shared at an organizational level. For RQ3's exploration of knowledge barriers encountered during employees' performance of routine business processes, Dervin's Sense-Making Theory was selected because it addresses individual experiences. Weick's Organizational Sensemaking is relevant to explore for barriers encountered at the group and organization levels. An explanation of each theory is presented in detail in the following section.

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Communication/Information Sciences and Organization Theories

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Dervin's Sense-Making and Weick's Organizational Sensemaking

Sense making is the ability or attempt to gain insight into or an understanding of an ambiguous situation. In other words, the process of sense making is to create situational awareness and to understand circumstances of high complexity or uncertainty in order to facilitate decision making. Sense making is applicable to the study of information seeking and information uses in the workplace (Cheuk, 2007). The two most notable academic scholars on this topic are Karl Weick and Brenda Dervin. Weick's theory is more normative and takes an organizational approach, while Dervin's theory addresses individual communication.

Organizations operate in a dynamic and uncertain world, so it is very important for them to make sense of the changes and developments occurring in their external environments. Organizations generate new knowledge which can then be used in designing new products and services, or in enhancing their existing offerings, and in improving the efficiency and effectiveness of organizational processes. Organizations search for and evaluate new information in order to

make educated decisions. Organizational members evaluate what is currently happening in their internal organizational environments in order to have a meaningful interpretation of organizational activities. Sense making begins when there are changes in the organizational environment. The application of a sense-making approach helps the understanding of the organization and leads to new knowledge creation.

In fact, sense making is a philosophically-informed methodological approach for attending to and researching human "communicating" (Foreman-Wesrnet, 2003). "By going through a continuous and simultaneous interplay, knowledge is created and re-created via sense making of external changes, sense making in knowledge creation and sense making in decision making." (Yao, Othman, Abdalla & Jing, 2011).

As Yao et al.'s article (2011) indicated, during the sense-making process, organizational members identify what information is significant and deserving of their attention. They form potential explanations of phenomena, shaped by their past experiences. They exchange and discuss their opinions to reach a collective interpretation, which guides the next information conversion or knowledge creation. During knowledge creation, members share their personal knowledge through meetings and trainings as well as through other formal or informal channels. When its members have attained sufficient understanding and knowledge, the organization is expected to select or design and evaluate a proper knowledge management strategy that is closely aligned with the overall organizational vision and goals. All three sense-making-based modules are dynamic information flow processes, subject to interruptions and iterations (Yao, Othman, Abdalla, & Jing, 2011).

Dervin's Sense-Making Theory focuses on how human beings communicatively make and unmake sense of the many diverse kinds of inputs that have the potential to be "informative."

Dervin's Sense Making is a conceptual tool for understanding the relationship of information and meaning, and how human beings derive meaning from information. In Information Science, sense-making methodology was used in research projects, to shift the emphasis from information sources to information users (Dalrymple, 2001). This shift in focus was accomplished by viewing the act of "information seeking and use" as "modes of communication practice" (Savolainen, 1993, p. 13).

Dervin's Sense-Making Methodology (SMM) has been used as a theory or model for studying human behaviors within the meta-categories of information needs, seeking and use (Al-Suqri, 2015). SMM has been applied to research in Library and Information Science with a focus mainly on information seeking and knowledge gaps among users of information systems, as well as by other disciplines such as knowledge management, gender studies, librarianship practices and nursing practices (Dervin, 2014).

As per the illustrations by Dervin in the 2015 publication *Information Seeking Behavior and Technology Adoption*, central to SMM (see Appendix I - Diagram 2) as a methodology is conceptualizing the human being as a body-mind-heart-spirit living in a time-space, moving from a past, in a present, and to a future anchored in material conditions. The time-space, across situational conditions, includes a person's history, experience, horizons (past, present, future), constraints, barriers, habits and skills. This human being carries a type of metaphorical baggage, including power structures, organizational systems and procedures, cultures and communities - labelled as "context." These factors are usually interpreted in research as structural arrangements within which individual agency operates. The human being faces gaps (questions, confusions) in his or her knowledge about a topic of interest or a decision to be made. The bridges to connect the past and future to permit the person to move onward are listed as ideas, cognitions, and thoughts,

which include: attitudes, beliefs, values, feelings, emotion, and memories. Sources of information (which can take the form of channels, media, other people or institutions) are shown as potentially providing fodder for building the bridges that overcome the gaps. Along the way, the person can potentially make judgments about what information has either served or impeded movement along this journey. The outcomes of these kinds of judgments, called *relevance* in the metaphor, may be applied by this person to any material/interpretive encounter.

SMM assumes there are two requirements to allow humans beings to make some pronouncement on this disentanglement - one is to provide a framework for inviting input about outside expectations. The second is inventing ways of communicating collectively that allow unhampered differences to be aired without excessively self-centered outcomes. The intent of SMM is to try to yield research results from which researchers can make inferences and connections within their own discourse communities. SMM does not conceptualize the individual human being as the research unit of analysis. Rather, the unit of analysis can be described in multiple ways, such as person-in-situation, or person-asking-question, or person-evaluating-outcomes. SMM assumes that habitual, repetitive patterns can be found only under certain conditions and it is the researcher's task to use a research design that will illuminate those conditions as well as the conditions that foster flexibility of response (Al-Suqri, 2015).

In general, Dervin's methods focus on locating authentic situations in which meaning is created through the discovery of "gaps" and discontinuities in a person's information experience. Sense making characterizes knowledge perspectives as an "approach to studying human sense making" that primarily emphasizes the active process of communicating that occurs in time and space, not just what content was communicated. Sense-making is "what users want from systems, what they get, and what they think about them" (Dervin, 1992).

With a similar focus on cognition, Karl Weick's Sensemaking Theory emerged in the Organizational Communication and Management fields. The focus of Communication and Information Science in behavior studies had shifted to user-oriented rather than system-oriented approaches. In addition, LIS had opened up to more interpretative or phenomenological assumptions about the nature of communication and the nature of human sense making.

Weick's Organizational Sensemaking (1995) developed the concept of sensemaking as a way to understand "a central activity in the construction of both the organization and the environments it confronts." He views organizations as "collections of people trying to make sense of what is happening around them" (Weick, 1995). This theory defines sensemaking as the process through which we define our identity and continuously shape experience into meaningful patterns, enabling us to move forward in action despite contextual ambiguity.

Weick's model is more widely cited in the Organization Studies literature than in Information Science research (Fisher, Erdelez & McKechnie, 2005). Organizational researchers have studied sensemaking as part of strategic learning (Thomas, Sussman & Henderson, 2001). Researchers using Weick's Sensemaking Theory have followed varied methodological paths, but qualitative, interpretative approaches can be appropriate (Fisher, Erdelez & McKechnie, 2005). Weick's (1995) Sensemaking consists of seven elements: *identity* and identification are central – who people think they are, within their context, shapes what actions they may take and how they interpret events; *retrospection* provides the opportunity for sensemaking, because the point of retrospection in time affects what people notice; people *enact* the environments they face in dialogues and narratives; sensemaking is a *social* activity in that plausible stories are preserved, retained or shared; sensemaking is *ongoing*, so individuals simultaneously shape and react to the environments they face; people *extract cues* from the context to help them decide what information

is relevant and what explanations are acceptable; and people favor *plausibility over accuracy* in accounts of events and contexts.

Weick's Sensemaking Theory has been applied in understanding personal, small group, organizational, national and global communication practices. This versatile theory has been used by constructivists as the framework for asking neutral questions via interview techniques. Through human stories that review cognitive and affective motivations to contextualize information behavior, sensemaking and narrative analysis offer the potential for discovering new vistas of information behavior (Fisher, Erdelez & McKechnie, 2005).

What Exactly is "Knowledge" About?

Knowledge is a fundamental building block for organizations to develop core competencies in order to face challenges, manage complexities, and remain competitive. Knowledge can be present in either explicit or tacit forms (Polanyi, 1962). Additional aspects of knowledge that scholars have investigated include the learning process (Szulanski, 1996), the creation of knowledge (Nonaka & Takeuchi, 1995), and the transfer of knowledge (Zander & Kogut, 1995). There is a need to understand the epistemology of this concept, through inquiries into "what knowledge is" and what types of knowledge exist, in order to understand the knowledge sharing, transfer and retention phenomena occurring in business enterprises, as well as to identify knowledge barriers in the performance of business processes.

In the time of the ancient Greeks, Plato (427-347 BC) and his student Aristotle (384-322 BC) were the earliest philosophers to try to answer the question "what is knowledge?" Plato, from the idealistic perspective, defined knowledge as a perception, true judgment and justified true belief (Annas, 2003). Aristotle, from the empiricist perspective, defined knowledge as that which is gathered through logical and empirical methods. Plato viewed knowledge as a state of being, while

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Aristotle viewed knowledge as an action (Jashapara, 2003). These two early philosophical concepts of knowledge still exert a great influence on the logic and concept of knowledge used in the present day. For instance, Nonaka and Takeuchi (1995) defined knowledge as a dynamic human process for justifying personal belief of truth, similar to Plato's concept of true judgment. Davenport and Prusak (1998) defined knowledge as framed experiences and contextual information, similar to Aristotle's empirical viewpoints. As the centuries moved on, the conceptualization of knowledge varied from one era to another (Jashapara, 2010). In the Agricultural Age, knowledge was related to agricultural work (Wiig, 1997). In the Industrial Age, knowledge was about product leadership, operational efficiency, metrics and standards (Skyrme, 2000). In the Information Age, knowledge was focused on management leadership and organizational theories (Bennett, Wise, Woods, & Harvey, 2003), and in the knowledge era, knowledge is associated with intangible assets, value creation, and innovation (Skyrme, 2000).

The Data-Information-Knowledge-Wisdom (DIKW) Hierarchy

As a means to gain insight into what knowledge is and what it is not, Ackoff (1989) built a taxonomy of the DIKW hierarchy model (Diagram 3). As the DIKW pyramid indicates, wisdom is based on knowledge, knowledge comes from information and information comes from data (Ackoff, 1989). Therefore, data are the most basic units that are in such a raw form that they alone cannot be used to predict events or to describe the need to obtain data, but still play a great part in business and organizational processes (Davenport & Prusak, 1998). Information is defined as organized data, to the extent that what was originally only data becomes meaningful from a receiver's perspective (Jaspara, 2004). Knowledge resides in an individual's mind and is interpreted from information by individuals (Liyanage, Elhag, Ballal & Li, 2009). Therefore, knowledge is built on data and information.

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Ackoff's 1989 DIKW hierarchy model (Diagram 3) has been used in the Information Science literature as a foundation for understanding knowledge. Some modifications have been made to it; for example, Clark (2004) introduced "understanding" into the DIKW model as a cognitive and analytic process, and Liew (2013) introduced "intelligence" as another unit in the DIKW model, to emphasize the inseparable relationship between knowledge and wisdom.

Different Forms and Types of Knowledge

Scholarly literature in Management and Information Science areas have indicated that knowledge is acquired through self-learning experience (internalization) or through interactive human activities (Small & Sage, 2005). Unlike data or information, knowledge is subjective, often based on experience, and highly contextual. Although several philosophers, as with Plato's "justified true beliefs," have tried to define knowledge in the past, there remains no definitive answers to the question of "what is knowledge?" However, philosophers have identified two essential classes of knowledge, which are explicit and implicit (tacit) knowledge. Knowledge has also been described as existing in three forms: public knowledge is explicit knowledge that has been taught and shared routinely in public domains; shared expertise is proprietary knowledge exclusively held and shared among knowledge workers in their own communication settings; and personal knowledge is tacit knowledge that exists in people's minds. Personal knowledge is the least accessible form, but it is used non-consciously in work and daily life (Dalkir, 2011). New knowledge is generated through the process of individual learning.

This conceptualization of knowledge also applies to organizational learning, which is based on applying knowledge for a purpose and knowledge is also generated by the process. Organizational knowledge acquisition is the "amplification and articulation of individual knowledge at the firm level" (Malhotra, 2000). Therefore, organizational learning (OL) is defined

as "the bridge between working and innovating" that links learning to action for useful improvement (Brown & Duguid, 1991). In other words, organizational learning can be defined as cognitive learning from the process by which the organization improves over time, by assessing what has worked and what did not work in the past, and this collective knowledge is then transferred to benefit future knowledge workers (Dalkir, 2011).

Knowledge can be broadly classified into two main types: explicit knowledge and tacit knowledge, and then further subdivided into several sub-types: procedural, declarative, semantic and episodic knowledge. Explicit knowledge is knowledge that can be presented in various systematically written or encoded forms. However, tacit knowledge is subjective and based on experience, and is not easily articulated, captured, encoded or communicated in any written forms (Polanyi, 1966; Nonaka & Takeuchi, 1995). Polanyi (1966) asserted that explicit knowledge is rooted in tacit knowing, and tacit knowledge brings more value to an organization than explicit knowledge does. According to Nonaka and Takeuchi (1995), tacit knowledge has two dimensions: technical and cognitive. The technical dimension is the "know-how" that individuals have acquired from experience, but is difficult to articulate. The cognitive dimension is comprised of the schema, personal belief and perceptions that are ingrained in an individual.

Nonaka and Takeuchi (1995) illustrated the close tie between explicit knowledge and tacit knowledge in their knowledge creation framework called the SECI model (Diagram 5) which stands for: Socialization, Externalization, Combination and Internalization. This model defines a process of how tacit knowledge is converted to explicit knowledge and then generates new tacit knowledge. Socialization describes the processes in which tacit knowledge generates new tacit knowledge via human interaction in experience-sharing opportunities.   The next step is Externalization, a process in which tacit knowledge is converted to an explicit form and is

embodied in documents, manuals or other codification formats. In this stage, tacit knowledge is crystalized into explicit forms which allow knowledge sharing with other participants. Combination is the process of converting explicit knowledge into another form of explicit knowledge, such as putting content from a written document into a database. Internalization is the process of converting explicit knowledge into tacit knowledge, such as when people learn and remember the explicit knowledge contained in a training manual, creating their own tacit knowledge. This cycle continues to spin in generating new knowledge.

From the psychological and behavioral perspectives, there are four types of knowledge (Collins, 1993): embrained knowledge, embodied knowledge, encoded knowledge and embedded knowledge. Embrained knowledge refers to explicit theoretical knowledge, and its availability depends on the level of the individual knowledge-seeker's skills. Embodied knowledge is action-oriented, similar to know-how knowledge (Polanyi, 1962) and the knowledge of experience (Nonaka & Takeuchi, 1995). Embodied knowledge is exemplified by the tacit knowledge of "learning-by-doing." Encoded knowledge is collective-specific explicit knowledge (Polanyi, 1962) that is stored in different databases, symbols and signs. Embedded knowledge is tacit knowledge based on common shared beliefs and understandings within organizations, that promote effective communication between employees for knowledge exchange. Tacit knowledge is generally difficult to articulate and transmit, but embedded knowledge reduces ambiguity or misinterpretations.

Knowledge Sharing, Knowledge Transfer and Knowledge Barriers

To study the use of communities of practice in knowledge management, key terms like knowledge sharing and knowledge transfer would be used in the discussion (Paulin & Suneson, 2012). These two terms have been used interchangeably in some literature (Badaracco, 1991;

Hansen, 1999) while some authors (Liyanage, Elhag, Ballal & Li, 2009) used these terms together. In fact, there is a common dividing line on the level of analysis between knowledge sharing and knowledge transfer. The term *knowledge sharing* is used by authors focusing on the individual level, while *knowledge transfer* is frequently used when focusing on groups, departments, or organizations (Argote & Ingram, 2000). This insight is further supported by the *Encyclopedia of Knowledge Management* (Schwartz, 2006), which states that knowledge sharing is defined as "the exchange of knowledge between and among individuals, within and among teams, organizational units, and organizations." In this source, knowledge transfer is defined as "the focused, unidirectional communication of knowledge between individuals, groups or organizations such that the recipient of knowledge has a cognitive understanding, the ability to apply the knowledge, or applies the knowledge." In fact, Christensen (2003, p. 8) emphasized that knowledge transfer is about not only identifying (accessible) knowledge, but also acquiring it and subsequently applying this knowledge to develop new ideas or enhance existing ideas, to make a process or action faster.

Knowledge sharing is an interactive people-to-people process to exchange knowledge (Ryu, Ho & Han, 2003). Knowledge transfer is "the conveyance of knowledge from one place, person or ownership to another" (Liyanage, Elha, Ballal & Li, 2009), and so it can also be defined as "the process through which one unit is affected by the experience of another" (Argote & Ingram, 2000, p. 151). The quality and degree of knowledge sharing that can actually take place is determined by the nature of the specific knowledge in question, the motivation to share, the opportunities to share, the organizational culture and the work environment (Paulin & Suneson, 2012).

In the literature, there are two dominant views of knowledge that have been derived to differentiate between knowledge sharing and knowledge transfer: 1) knowledge as an object to

share, and 2) knowledge as a subjective contextual construction in a social context (Sveiby, 2007). Knowledge sharing is considered to be an ongoing process in an organization, along with other activities (Christensen, 2007).

According to Christensen (2007), there are five factors that impact knowledge sharing in organizations: the stickiness of knowledge (sharing tacit knowledge requires more effort than sharing explicit knowledge), the lack of an identity, a weak relationship between a receiver and a sender of knowledge, the lack of a willingness to share knowledge, and no knowledge about knowledge. For knowledge transfer, Szulanski (1996) states that there are four stages: initiation, implementation, ramp-up and integration. The initiation stage is when the needs and wishes to have knowledge exist in an organization. The implementation stage includes transferring knowledge according to the receiver's requirements and involves a need to overcome problems. In the ramp-up stage, a receiver begins to determine and utilize the transferred knowledge to solve problems. The integration stage is when a receiver met her or his needs by applying the transferred knowledge. Szulanski also identifies four sets of factors affecting the transfer of knowledge: the attributes of the knowledge transfer, the attributes of the knowledge source, the attributes of the knowledge receiver and the attributes of the context.

The knowledge management literature also indicates that trust and motivation are important components of knowledge transfer and knowledge sharing. There are three types of trust involved (Dignum & Van Eijk, 2005): a personality-based trust to identify the trustworthiness of the receiver, an interpersonal trust based on their previous experience and interactions, and an impersonal trust, such as the person's trust in the organization.

Besides the above-mentioned factors that affect knowledge sharing and knowledge transfer, several knowledge sharing and transfer barriers have been identified across the Information

Science literature. In general, several types of knowledge barriers have been identified by scholars. Technological barriers refer to how different technological approaches or systems may cause incompatibilities that make it difficult for departments to transfer and share knowledge (McLaughlin, Paton & Macbeth, 2008). Content barriers occur when employees do not recognize or understand some procedures. Barriers can exist within the organization, such as having a weak culture of sharing. For example, in some Asian organizations, people will share knowledge only among family members and close colleagues (Yao, Kam, & Chan, 2007). Barriers based on organizational culture also include when employees perceive "knowledge sharing" as a threat or violation, and they "keep secret information to avoid losing their job" (Hermann, 2011). Personal barriers include circumstances where organizational members have no motivation to share, and withhold information to make themselves more competitive and to have an advantage over others (Hermann, 2011).

Knowledge transfer and innovation diffusion can help organizations to gear up for and be competitive in the knowledge-based economy.   The process of knowledge transfer is fundamentally a people-to-people interaction. Communication lies at the heart of the knowledge transfer process. This leads to the notion that both innovation diffusion and knowledge transfer are related in some ways. Knowledge transfer involves networking with people to share knowledge between members and within organizations, so it can be identified as an act of communication. The knowledge transfer process has two main components: the source or sender shares the knowledge, and the receiver acquires the knowledge (Liyanage, Elhag & Ballal, 2012). Knowledge transfer (KT) is an area of knowledge management concerned with the movement of knowledge across the boundaries created by specialized knowledge domains (Carlile & Rebentisch, 2003). Knowledge management and innovation are interrelated in the sense that how

well the organization adapts to its environment and becomes innovative, may depend on how well it succeeds in its knowledge-creation activities (Choo, 1998).

Diffusion of innovation refers to the communication, spread and adoption of new ideas among social communities (Rogers, 2003). Newell et al. (2000) indicated that there are strong ties (close associations among members of firms) and weak ties that link individuals from organizations across different sectors or communities that would not normally make contact during their day-to-day business. Regardless, there are strong and weak relationships, and both are important for the diffusion of new ideas. Researchers have affirmed that knowledge transfer accelerates the diffusion of innovation "by making exclusive know-how and/or proprietary knowledge available to others" as an input to further research and development (Liyanage, Elhag & Ballal, 2012). Knowledge transfer and innovation both require an organizational culture where people both want to and are encouraged to be innovative and share their knowledge (Horibe, 2007).

The Importance of Knowledge Management in Strategic Management

Knowledge flows are recognized as being among the most important elements in the economy (Yao, Othman, Abdalla & Jung, 2011). In fact, knowledge has become the key economic resource and the dominant source of competitive advantage (Drucker, 2011).

The field of knowledge management does suffer from the "Three Blind Men and an Elephant" syndrome (Dalkir, 2011). In fact, knowledge management is a highly multidisciplinary field. Knowledge management draws upon a vast number of diverse fields such as Organizational Science, Cognitive Science, Information Technologies, Information and Library Science, Sociology and Education.

Knowledge management is a systematic approach using procedures for capturing, structuring, managing, and disseminating knowledge throughout an organization, in order to work

fast, reuse best practices and reduce costly rework from project to project (Nonaka and Takeuchi, 1995).

Knowledge management is important to making the organization more productive, more effective and more successful. The application of knowledge management enhances collaboration, improves productivity, and enables and encourages innovation (Hibbard, 1997). In other words, organizational knowledge will lead to more effective means of generating, sharing and managing knowledge in an organization, as knowledge is inseparable from knowing how to get things done in complex organizational work (Guo & Sheffield, 2007).

Organizational knowledge is an important bundle of intangible resources that can be the source of a sustainable competitive advantage (Hitt, Ireland & Hoskisson, 2014). Knowledge has the greatest ability of all resources to serve as a source of sustainable differentiation, because of immobility (McEvily & Chakravarthy, 2002) and general applicability (Miller & Shamise, 1996). Knowledge permits the firm to predict more accurately the nature of the commercial potential of changes in the environment and the appropriateness of strategic and tactical actions (Cohen & Levinthal, 1990). Without such knowledge, an organization is less capable of discovering and exploiting new opportunities (Wiklund & Shepherd, 2003).

There are three levels of organizational perspectives on knowledge management (Wiig, 1993): the business perspective, the management perspective and the hands-on perspective. The business perspective focuses on why, where and to what extent the organization must invest in exploiting knowledge for business strategies, products and services planning, alliances, acquisitions or divestment from knowledge-relation points of views. The management perspective focuses on determining, organizing, directing, facilitating and monitoring knowledge-related practices and activities required to achieve the desired business strategies, innovations and

objectives. The operational hands-on perspective focuses on applying the "know-how" expertise knowledge to conduct specific knowledge-related work and tasks.

Procedural knowledge refers to knowing the step-by-step actions for how to do things and arises from one's experience with similar situations (Lesgold, 1998). It is difficult to formalize, articulate and transfer procedural knowledge between organizational contexts (Nonaka & Takeuchi, 1995). Knowledge about markets and technology represent two strands of procedural knowledge that can potentially have strong performance implications, because they increase the organization's ability to discover and exploit opportunities (Wiklund & Shepherd, 2003).

Entrepreneurial Orientation (EO) is a combination of three qualities: innovativeness, pro-activeness and risk-taking (Wiklund, 1999). Knowledge-based resources (applicable to the discovery and exploitation of opportunities) are positively related to firm performance, and having an EO outlook enhances this relationship (Wiklund & Shepherd, 2003).

Developing the requisite market-technology knowledge for success requires knowledge creation and exploitation (Dougherty, 1992). Nonaka & Takeuchi (1995) distinguish between tacit and articulable. Tacit knowledge (know-how) is personal, not easily formalized, not easily communicated and is rooted in a specific context (Brown & Duguid, 1998). Knowledge may be tacit, not codifiable and thus acquired only through hands-on experience. Articulate knowledge is explicit, codifiable and transmittable through a formal or systematic language (Brown & Duguid, 1991). Tacit knowledge is rich and dense but not easily shared, while articulate knowledge is thin and grainy but easily shared (Dougherty, 1992).

Nonaka and Takeuchi (1995) indicated the creation of new knowledge occurs as the two types expand and interact over time. Cohen and Levinthal (1990) emphasized that the ability to recognize the value of new ideas, assimilate them and apply them to commercial ends depends in

part on the base of prior knowledge, both tacit and articulated. Cohen and Levinthal suggested that the more objects, patterns and concepts are stored, the more readily new information about these constructs can be acquired. Knowledge creation is a social rather than an individual process since the transformation of tacit into articulate knowledge requires "direct and continual dialogues between people" who are grounded in the same situation (Nonaka and Takeuchi, 1995). Nonaka and Takeuchi suggested two approaches for transforming tacit into articulate knowledge. One is to create concepts, which are condensations of tacit images into language, drawings or gestures. Another knowledge creation process is to cluster and re-cluster information and meanings as they accumulate.

Knowledge is also said to be an immersion in the ongoing flow of events in a field of endeavor (Dougherty, 1992). A diversity of knowledge is important for novel domains because it increases the prospect that "incoming insights will relate to what is already known" (Cohen and Levinthal, 1990). An understanding of organizational renewal must be based on the processes that creating and exploiting knowledge is necessary to formulate viable products (Dougherty, 1992).

Issues of Information and Communication in Small Business Organizations

Industry sectors vary when it comes to determining what constitutes a small business. In general, a small business is an independently-owned and operated company that is limited in size and in revenue, depending on the industry. Regardless of the types of industries, small businesses come across similar concerns in handling their human intellectual assets and managing knowledge.

Small business enterprises differ from large companies in several ways that affect their information-seeking practices. These differences include: the lack of a substantial information management system, the frequent concentration of information-gathering responsibilities that are

borne by only one or two individuals and lower levels of resources available for information-gathering (Lang, Calantone & Gudmundson, 1997).

Small businesses often face technological disadvantages in comparison to larger organizations. Information and communication technologies (ICTs) possess the potential to contribute significantly to economic growth. Small businesses are adopting ICTs to support their competitiveness, productivity and profitability. However, the diffusion of ICTs in small and medium enterprises (SBEs) is low (Assinform, 2010). ICT diffusion in small businesses differs from that in larger organizations because of the specific characteristics of SBEs, such as having relatively limited resources, technology and capabilities, although the less-complicated structure provides small firms with more flexibility in response to changes (Girgin, Kurt & Odabasi, 2011). The inhibiting factors that suppress investments in ICTs by SBEs are: the high initial financial investment, the lack of skilled staff, and that the technology is not user-friendly without adequate training (Consoli, 2012).

Knowledge Management in Business Enterprises

The importance of knowledge management in organizations is growing because we are immersed in a knowledge-based economy. Knowledge management (KM) emerged as an established scientific discipline in the early 1990s (Nonaka, 1991). Knowledge management spans the fields of business administration, information systems, management, and information sciences (Alavi & Leidner, 1999). As mentioned above, in the Information Science literature, the DIKW (Data, Information, Knowledge, Wisdom) model (also known as the Knowledge Pyramid) represents the purported structural and functional relationships between data, information, knowledge and wisdom (Rowley, 2007). This model implies that having knowledge is more than just having power; it also generates wisdom that is essential in strategic planning for organizational success.

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Currently, the overload of data which is the foundation of the pyramid, makes knowledge management increasingly important to an organization's success, by facilitating decision-making capabilities, building learning routines, and stimulating innovation. A trace of the roots of knowledge management indicate that a number of management theories have contributed to the evolution of KM concepts. Knowledge management-like approaches have existed for years in large organizations within commercial sectors all over the world, but they operated under different labels such as competitive intelligence, the learning organization, human knowledge or artificial intelligence.

Managing knowledge assets provides small businesses with new tools for survival growth and maintaining a sustainable competitive advantage (Omerzel & Antoncic, 2008). Many literatures describe how various large firms successfully practice knowledge management (Evangelista et al., 2010), but few empirical studies have identified the factors influencing knowledge management adoption in small business enterprises (Finkl & Ploder, 2009). The issues that small businesses face in implementing knowledge management practices are not simply a scaled-down replica of large company experiences (Sparrow, 2001). This is because most of the knowledge management research studies have focused on large companies and were oriented for their situations and needs (Wong & Aspinwall, 2004). Without an understanding of SBE's specific conditions, these research findings cannot be directly applied to the SBE environment (Wong, 2005).

Five key peculiarities (Desouza & Awazu, 2006) are identified in the literature to differentiate knowledge management practices in small business enterprises from those in large companies. They are: 1) lack of explicit knowledge repositories, because each manager/owner acts as the knowledge repository; 2) common knowledge possessed by SBE members is deep and

broad to ease the issues of knowledge transfer, sense-making and application; 3) the close social ties between SBE members act as a deterrent against the issues; 4) SBEs have a knack for exploiting foreign sources of knowledge because of their limited resources and because they cannot spend efforts to create new knowledge; and 5) technology is not as much a part of their knowledge management approach. Their use of technology is usually more minimal than for larger organizations.

Knowledge management has been a popular subject matter in doctoral dissertations since 1998 (Grossman, 2007). Knowledge management is a strategic initiative that changes the paradigm of information systems from data processing and providing information, to harvesting and capitalizing on the knowledge derived from individual members of the organization's expertise and capturing it as documented material (Hussain, Lucas & Ali, 2004). The scheme of applying Information Sciences to business administration typically focuses on organizational objectives such as improved performance, competitive advantage and innovation, the sharing of lessons learned, integration and the continuous improvement of the organization (Gupta & Sharma, 2004). However, the application of knowledge management in small business enterprises (SBEs) is quite different. Several researchers have done organization studies of knowledge management, but the existing empirical literature provides only fragmented insights into KM in SBEs. The field of knowledge management as applied in a small business context is a highly important phenomenon that "stills calls for more research" (Durst & Edvardsson, 2012, p. 898).

Scholarly Publishing

As a subset of the publishing industry, academic publishing includes thousands of publishers that disseminate academic research and scholarship. Most academic research is published in the form of academic journals or books. Many of these academic and scholarly works, though not all,

are based on some form of peer-reviewed or editorial refereed processing to qualify for publication. The process of academic publishing begins when an author's manuscript is submitted to a publisher. Then the manuscript passes through two distinct phases: peer review and production.

The peer review process is organized by the journal editor and is increasingly managed online, through one or more rounds of review of the author's modifications in accordance with the reviewers' comments. This process is repeated until the work is accepted. The production process is controlled by the publisher, in that the article is taken through copy editing, typesetting and inclusion in a specific issue of the journal, often appearing in both print and online formats.

In general, there are two distinct endpoints on the spectrum of academic publishers. At one end, there are the university presses and discipline-specific associations that publish only one or two journals. At the other end, five giants – Elsevier, SpringerNature, Wiley-Blackwell, Taylor & Francis and Sage – publish the majority of academic papers, accounting for a huge market share worth in excess of $10 billion US. In between are some small private publishers and major multidisciplinary associations such as the American Chemical Society (ACS), and the Institute of Electrical and Electronic Engineers (IEEE), that publish most of the research in their respective fields.

Since the early 1990s, academic publishing has undergone a major transition from the print to the electronic format, including the licensing of electronic resources that are used in a digital environment. Currently, open access for journal articles via the Internet is a trend, with authors' making upfront payments of hundreds or thousands of dollars in publication fees. This trend is also considered to be a threat to many not-for-profit scholarly publishing firms.

University Presses as Knowledge-Intensive Firms

A knowledge-intensive firm (KIF) is defined as an organization that offers to the market the use of fairly sophisticated knowledge of knowledge-based products (Alvesson, 2004). The publishing sector is an example of a KIF-oriented industry. In terms of the nature of the work and how it is managed and organized, some specific characteristics of a KIF are: knowledge workers using intellectual and symbolic skills in their work; a high degree of individual autonomy, along with the downplaying of the organizational hierarchy; extensive communication for coordination and problem-solving; and subjective and uncertain quality assessment (Alvesson, 1995).

Small businesses in the academic publishing sector include independent commercial publishers and university presses. According to the Association of University Presses, university presses differ from commercial publishers in their place in the academic landscape. University presses are affiliated with their parent institutions, serving the public good by generating and disseminating knowledge as not-for-profit, mission-driven scholarly publishers.

Crisis at University Presses

Academic book publishing operates mainly in three major streams: the traditional formats of textbooks, monographs and general-interest titles (Schonfeld, 2016). University Presses face challenges to their traditional business model, because of the trends of digital access, changing acquisition patterns at the library and open-access monograph models in the publishing sector. With budget cuts and digital scholarly publishing trends, the book sales of university presses have declined ("Academic Books", 2017). The 2016 university press' sales data dropped down to the level of the 2005 figures and its core business – print monograph sales – is crumbling away with no clear revenue source to replace it. Used books and rental books are also eating into textbook sales (Straumsheim, 2016).

Among the university presses, the world's two oldest and largest university publishing houses, the Universities of Cambridge and Oxford (both established in the sixteenth century) have needed to reorganize and lay off employees to survive. Several American universities such as the University of Missouri have shut down their presses (Eligon, 2012). The rest of the university presses have struggled to survive by maintaining their impressive resilience and/or merging with their academic libraries (Schonfeld, 2016). Change and innovation are inevitable in the fight for survival by university presses.

Research Questions

This study is designed to understand the university presses' directors and employees in terms of their knowledge practices, including knowledge seeking, knowledge sharing, knowledge transfer and knowledge retention, in completing their job tasks. With these considerations, this research study addresses the following questions:

RQ1:   What factors influence individuals' knowledge-seeking and knowledge-sharing in knowledge-intensive firms such as university presses?

RQ2:   In what ways do knowledge-intensive firms like university presses apply and retain their operational knowledge in their organizations?

Ancillary question:

RQ3:   What types of knowledge barriers do university presses encounter in their daily processes?

RQ	Theories
RQ1: What factors influence <u>individuals' knowledge seeking and knowledge sharing</u> in <u>knowledge-intensive firms</u> such as university presses?	Dervin's Sense-Making
RQ2: <u>In what ways</u> do <u>knowledge-intensive firms</u> like university presses <u>apply and retain</u> their operational knowledge in their <u>organizations</u>?	Weick's Organizational Sensemaking
RQ3: What types of <u>knowledge barriers</u> do university presses encounter in their daily processes?	Devin's Sense-Making, Weick's Organizational Sensemaking

Figure 2 – Matching Research Questions with Theories

Key Terms and Description of Variables

The following are definitions of the main terms being used throughout this study. Further explanation of and applicability in the use of these terms are discussed in Chapter Three. The description of measuring variables used in the quantitative research of this study can be found in Appendix E.

Mixed Methods Research: "Mixed methods research is a research design with philosophical assumptions as well as methods of inquiry … Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone" (Creswell & Plano-Clark, 2007).

Knowledge-Intensive Firms: firms where most work is said to be of an intellectual nature and where well-educated, qualified employees form the major part of the workforce (Alvesson, 2004).

Small Business: The term "small business" refers to the not-for-profit scholarly publishers of universities that publish books for scholars and specialists. A small business is defined by the United States Small Business Administration as an organization with less than 500 employees. In this research, the employee sizes of university presses were from one to 130 employees. Therefore, the small businesses in this research are mini-businesses.

Behavior: the ways in which people behave, individually and collectively, when working together in organizations.

Culture: the sharing of assumptions, values and beliefs which govern how people behave in organizations. These shared values have a strong influence and dictate how people in the organization interact and perform their jobs.

Social Norm: the common standards within a social group regarding socially acceptable or appropriate behavior in particular social situations.

Technology: the application of information to the design, production and utilization of goods and services related to the organization's activities.

Knowledge Sharing: an activity through which information, skills and expertise are exchanged among people in an organization.

CHAPTER THREE

METHODOLOGY

This chapter discusses the methodology that was used for the research. It provides an overview of the methodological process, comprised of paradigm supposition, the underlying philosophical assumptions, and the different research inquiry designs, including methods for data collection and analysis.

An Overview of Research Methodology for this Project

Research methodology is the principle underlying the research methods to be carried out (Creswell, 2007) and a general approach for the research that is to be undertaken (Silverman & Marvasti, 2008). Research methodology includes how the research is conducted, and how data are gathered and analyzed to achieve the research goals. It is the principle and the logical processes that apply to a scientific investigation (Fellows & Liu, 1997). Research approaches are "plans and procedures that determine the philosophical assumptions that underlie the study, the procedures of inquiry or research design, and specific research methods of data collection, analysis and interpretation" (Creswell, 2014). The selection of a research approach depends on the nature of the research problem to be addressed. There are three major types of research approaches (Creswell, 2014): quantitative research, qualitative research and a mixed methods approach.

Quantitative research methods are adopted from natural sciences research. The strength of quantitative research methods is that quantifiable data can potentially be generalized to estimate the population. However, quantitative methods are weak in creating an understanding of the context or the social environment or setting of the research (Creswell & Plano-Clark, 2007). On the other hand, qualitative methods explore and/or explain social phenomenon via observation of or interaction with the participants of the study, in their natural settings. The researcher becomes

the data collection instrument, generating rich descriptions of the participants' interpretations of understanding "why" a phenomenon has occurred. This approach possesses downsides, with the researcher's possibly introducing bias through personal interpretations. In addition, there is the difficulty of generalizing the findings to a large population, because of the limited number of participants being studied (Creswell & Plano-Clark, 2007). Therefore, a mixed methods approach can offset the weakness of each component by providing a complete picture that notes trends and generalizations, as well as yielding in-depth knowledge of participants' perspectives (Creswell & Plano-Clark, 2007).

Rationale for Selecting a Mixed Methods Approach for this Research Study

Any set of beliefs that guides action is a paradigm (Kuhn, 1962) that characterizes its adherents' view of the world in terms of their ontology, epistemology and methodologies, in order to go about the process of exploring it (Guba, 1990). The methodological design of this research project took the research goal and research questions into consideration, mapping out a triangulation approach, with both qualitative and quantitative methods being used (see Figure 3). As knowledge management is a dual paradigm by nature (Gloet & Berrell, 2003) and this research project studied the humanistic side as well as the technical side, both quantitative data and qualitative data were required to address these issues.

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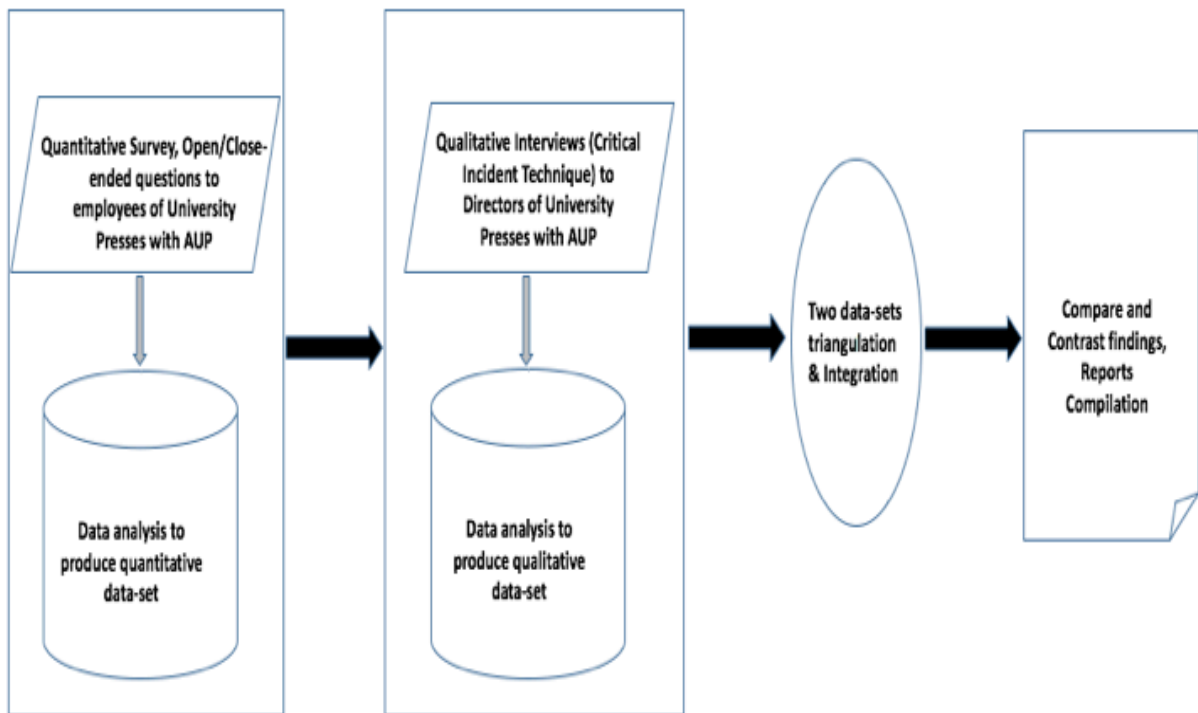
Figure 3 - An Overview of this Mixed Methods Sequential Design

The research questions in this study examined four aspects (behavioral, cultural, social and technological) of knowledge practices in the daily work activities of university press employees and managers. This project sought to understand the behavioral, cultural, social and technological aspects of the knowledge practices associated with university presses in the publishing sector. The behavioral aspect related to the range of actions taken by individuals or groups in knowledge practices. The cultural aspect encompassed the ethnicity and the organizational culture behavior in knowledge transfer and practices. The social aspect concerned norms and informal social behaviors related to sharing knowledge, and the technological aspect was the innovation adoption involved in knowledge practices.

Research Questions and the Focus Addressed in this Study

The research questions for this research project were:

RQ1:   What factors influence individuals' knowledge-seeking and knowledge-sharing in knowledge-intensive firms such as university presses?

RQ2: In what ways do knowledge-intensive firms like university presses apply and retain their operational knowledge in their organizations?

RQ3:   What types of knowledge barriers do university presses encounter in their daily processes?

To understand these issues, the following lists the data types required to address each research question.

RQ	Quantitative Data	Qualitative Data
RQ1	Survey – Self-Selection Sampling	Interview – Purposive Sampling
RQ2	Survey – Self-Selection Sampling	Interview – Purposive Sampling
RQ3	Survey – Self-Selection Sampling	Interview – Purposive Sampling

Therefore, both quantitative data and qualitative data were combined for this research, as in other mixed methods research studies (Morse, 2003). The mixed method research approach allowed the researcher to investigate the research problems with a wider scope (Creswell, 2008). This design type provided statistics and stories that may complement or contrast with each other to inform the exploration of the research questions in this social science inquiry, for a "better understanding" of the inherent complexities of human phenomena (Watkins & Gioia, 2015).

The sequential design was chosen for this research in order to have a generalized understanding of the four categories (behavioral, cultural, social and technological aspects) in knowledge sharing, via the more in-depth approach of critical incident methods. The research

process began with collecting and analyzing quantitative data, followed by collecting and interpreting the qualitative data, as a follow-up to the quantitative results. The purpose of this sequence was to use the qualitative data to enhance the explanation of the quantitative results that needed further exploration. This sequence also permitted the use of quantitative results purposefully to select the best direction for the subsequent qualitative research (Watkins & Gioia, 2015).

The researcher used two phases to implement the quantitative and qualitative studies in the research process, in order to explore any similarities or differences in these four aspects (behavioral, cultural, social and technological) of knowledge practices among employees and directors. Using this approach, findings from the qualitative data could possibly corroborate or explain any quantitative findings that presented an unanticipated outcome (convergence or divergence) of the study where a mixed methods study was undertaken (Dolye, Brady & Byrne, 2016).

The researcher collected quantitative and qualitative data simultaneously, analyzed the two datasets separately, and then interpreted the findings by comparing the results. Therefore, the sequential design was appropriate for this dual paradigm nature of social science research when the researcher sought a more complete understanding. This design was intuitive, with a clear distinction maintained between the qualitative and quantitative methods (Watkins & Gioia, 2015).

A quantitative approach was used to study the knowledge practices among all employees in a bottom-up style, to gain an understanding of the population. The subsequent qualitative approach employed a top-down style for senior management personnel, to explore the research topic from different levels. The use of qualitative research is "to understand and represent the experiences and actions of people as they encounter, engage and live through situations" (Elliott, Fischer &

Rennie, 1999). It was interesting to see if there were any similarities or differences in employees'

and directors' perspectives, and how their knowledge seeking began when problems arise. In fact,

this mixed methods approach is frequently referred to as triangulation, mixed methodology, multi-

strategy research or integrated methods (Denscombe, 2007), to incorporate both qualitative and

quantitative research methods to understand and provide insight into the research problems

(Neuman, 2006).

Research Design - Mixed Methods Sequential Design

The research design for this study featured a mixed methods methodology approach

involving both qualitative and quantitative components (see Figure 4). The focus of this sequential

study design was to examine behavioral, social, cultural and technological aspects in knowledge-

sharing and knowledge-retention practices in knowledge-intensive firms, specifically university

press organizations. The quantitative design provided more generalizable data, while the

qualitative research illuminated individual experiences of participants (Patton, 2002). Therefore,

the qualitative methods complemented the quantitative analysis in this research project (Hunt,

1994). The rationales for choosing this approach were: 1) combining research strands offset their

weaknesses to draw on the strengths of both, and 2) bringing together a more comprehensive

picture of the phenomenon through both quantitative and qualitative research (Harrison & Reilly,

2011). The ultimate goal was to use the findings of this research to develop a knowledge

management audit tool that would allow business enterprises to perform periodic self-evaluations

of their knowledge practices. In the sequential design, both quantitative and qualitative data were

collected to play mutual supporting roles for each other or to play a supporting role in a larger

design (Harrison & Reilly, 2011). This chapter, therefore, presents the research procedures that

were used by the researcher to perform data collection.

Step 1

Quantitative Design Strand:
• State quantitative research questions and determine the quantitative approach.
Collect the Quantitative Data:
• Obtain permissions from AUP, IRB
• Statistical sample analysis • Collect close/open-ended data with online questionnaire as an instrument.

Analyze the Quantitative Data:
• Analyze the quantitative data using statistics tests.

Step 2

Qualitative Design Strand:
• Determine the qualitative approach: interviews.
• Prepare interview guide
Collect the Qualitative Data:
• Obtain AUP/ IRB permissions. Recruit samples via Informant.
• Qualitative sample analysis.
• Collect open-ended data with protocols.

Analyze the Qualitative Data:
• Analyze the qualitative data using coding, procedures of theme development.

Step 3

Mix the Two Sets of Results:
•Identify content areas represented in both data sets and compare, contrast, and/or synthesize the results in a table.
•Identify differences within one set of results based on dimensions within the other set and examine the differences within the dimensions.
•Develop procedures to transform one type of result into the other type of data (e.g., turn themes into counts). Conduct further analyses to relate the transformed data to the other data (e.g., conduct analysis such as thematic counts).

Step 4

Interpretation:
• Summarize and interpret the results
• Discuss to what extent and in what ways results from these two types of data converge, diverge, related to each other, and/or produce a holistic understanding.

Figure 4 – Flowchart of the Procedures in Implementing the Mixed Methods Sequential Design

Philosophical Assumptions and Research Design for the Quantitative Portion

This quantitative research approach examined the knowledge sharing relationship among the variables (behavioral, cultural, social and technological aspects). These variables were measured using instruments so that the numerical data could be analyzed using statistical procedures (Creswell, 2014). The approach deals with research problems using mathematical and statistical techniques to identify facts and causal relationships, and adheres to the practices and norms of the natural scientific model (Fitzgerald & Howcroft, 1998). This approach is deductive in nature, as it focuses on developing theories, operationalizing concepts and subjecting them to empirical testing.

The focus of the quantitative research design was to identify causal relationships between the independent variables and the dependent variables. A non-experimental survey design with standardized questionnaires was used to measure thoughts, attitudes, feelings or behaviors of samples draw from a population. The choice and design of a survey instrument, with the focus on the research goals, is to access in a descriptive way the attributes of subjects, or to test theories in an explanatory way, using a structured questionnaire as part of the study plan (Gill & Johnson, 1997).

For this research study, because of the subjects' being in geographically-dispersed locations, and with a limited research budget, the researcher used an online survey questionnaire to collect data. The aim of the survey was to provide a general view of the employees' overall orientation in their behavioral, cultural, social and technological aspects. This survey was particularly used to understand the causal relationship between the variables: *organizational size* and *knowledge sharing*.

Data Collection and Procedures for the QUAN Study - Surveying

Survey Development

Stage One: Review Other Surveys and Design Survey Instrument

During the first stage of the survey development, the researcher conducted a literature review to learn from existing research about similar problems experienced by other researchers (Watkins & Gioia, 2015) using databases such as *Business Source Complete*, *Library & Information Science Abstract* and *ACM Digital Library*. Twenty knowledge management survey design articles across different disciplines were reviewed. Three knowledge management survey design articles were then selected from these twelve articles as a final list (see below) for in-depth reading. By referring to these three articles, a survey instrument was designed, with the goal of exploring four research aspects (behavior, culture, social and technology) for this dissertation.

Andersen, A. (1996). The Knowledge Management Assessment Tool (KMAT). *London: Arthur Andersen KMAT Study*.

Kulkarni, U., & St Louis, R. (2003). Organizational self-assessment of knowledge management maturity. *AMCIS 2003 Proceedings*, 332.

Yuan, Y. H., Wu, M. H., & Lee, J. C. (2012). Examining the role of knowledge transfer effect as a mediator variable among impact factors in knowledge innovation. *International Journal of Business and Information*, *7*(2), 205.

The researcher contacted the Association of University Presses in November 2017 for their approval to use their members as respondents. The Association preferred to review the survey questionnaires prior to their distribution via the Association. Therefore, working with a restricted and indirect interaction mode between the researcher and the population, the sampling method was then determined to be self-selection sampling, for the privacy of the research subjects, as well as for the convenience of data collection from a geographical-dispersed population. Although a pilot test would have improved the internal validity of the questionnaire, there was no guarantee of the

effect of the pilot study on the success of the full-scale survey (Van Teijlingen & Hundley, 2001). Another concern was to decide if the pilot study participants should be included in the main study, as they had already been exposed to an intervention and therefore might respond differently from those who had not previously experienced it. It was also impossible to exclude these pilot study participants, because it would have resulted in too small a sample in the main study (Van Teijlingen & Hundley, 2001). Because of the university presses' academic affiliation and geographical dispersion, it was difficult to find a similar population with such uniqueness, in order to conduct a pilot test. Therefore, the researcher chose not to do the pilot test. Instead, to establish the face validity of this survey instrument, a group of five librarians who had worked closely with the University of Tennessee's University Press on a regular basis were invited to comment on the questionnaire and to evaluate whether the questions effectively captured the topics under investigation.

Stage Two: Determining the Sample Size using Statistical Prior Power Analysis

The second stage was to determine the required sample size (Krejcie & Morgan, 1970). Sampling is a strategy used in selecting elements from a population, with the goal of providing a practical mechanism to enable extrapolation from a sample to a population. The determining of a sample size is an important and difficult step in planning an empirical study (Dattalo, 2008). Increasing the sample size provides higher statistical power for the analysis. However, a large sample size may simply waste time and resources for minimal gain. Therefore, using a statistical power analysis can estimate an optimal sample size beforehand to ensure the analysis is meaningful. The AUP has 144 members across the globe and it would have been expensive and impractical to survey every employee in all member presses. Therefore, the statistical priori power analysis technique helped to estimate the optimal sample size needed for making the study

worthwhile, particularly for a self-selected sample with no prior knowledge of the total number of volunteers.

Power analysis is the procedure that allows quantitative researchers to determine the sample size needed to enable statistical judgments that are reliable (Williams & Zimmerman, 1989). It is the probability of detecting a "true" effect when it exists, and to avoid catching a false null hypothesis, i.e. a Type II error. A priori analysis estimates the sample size based on acceptable levels of effect size and power. To conduct a power analysis, a common choice for the significance level in research is alpha = 0.05. The following sample size formula is used to arrive at a representative number of respondents when the population estimate is known (Godden, 2004):

$$n = \frac{Z^2 \times p\,(1-p)}{M^2}$$

Where:

n   = Sample size
Z   = Z value (e.g. 1.96 for a 95% confidence level)
P   = population proportion (expressed as decimal) (assumed to be 0.5 (50%)
M   = Margin of Error at 5% (0.05)

The confidence level measures the reliability of the data, i.e., the percent indicates how confident the researcher is that the results are correct. The confidence level corresponds to a Z-score. Typical choices are 90% or 95%. Here are the z-scores for the most common confidence levels (90% – Z Score = 1.645, 95% – Z Score = 1.96).

The confidence interval is about the margin of error that the researcher can tolerate. The population size is the total number of people for which the researcher can generalize the results. The member presses did not disclose their total numbers of employees on their websites, nor was this count reported to the Association of University Presses. Therefore, the calculation of the sample size estimation for this research project was based on the addition of the numbers of email

registrations on the two AUP listservs (the General listserv and the Directors listserv).

In other words, the population size was set to 1,347. That was the total number of names listed on the two AUP listservs – the "General" list had 1,200 email addresses and the "Directors" list had 147 email addresses. For the default significance level of this research, the standard deviation for how much variance the researcher expected in the responses was set to 0.05.

This survey used the University's Qualtrics tool as the online platform to collect survey responses. Besides using the formula to calculate the estimated sample size, the sample-size calculator on the Qualtrics webpage was also used to cross-check the ideal sample sizes with the different confidence levels, the same population size (1,347) and a 5% to 8% margin of error. Thus, an estimated sample size of 299 was required on a 95% confidence level with a 5% margin of error, or sample size of at least 98 was required on a 90% confidence level with an 8% margin of error.

| Population Size | Confidence Level = 95% | | | | Confidence Level = 90% | | | |
| | Margin of error | | | | Margin of error | | | |
	5%	6%	7%	8%	5%	6%	7%	8%
1347	299	223	172	136	226	165	126	98

After the survey was conducted, a total of 123 completed surveys were obtained. After the data clean-up process was completed, the actual usable sample size for this research was 107. Therefore, a 90% confidence level with 8% margin of error was set for this research.

Survey Instrument

A questionnaire design was used for this study to assess the four aspects of knowledge sharing among university press employees: behavioral, cultural, social and technology. The self-administered survey allowed for data collection from respondents with a focus on specific issues

(Thayer-Hart, Dykema, Elver & Schaeffer, 2010) and addressed a vast array of objectives (Brick, 2011). The questions posed were predominantly close-ended questions, with a finite set of answers provided and with scales to measure responses. A five-point Likert scale was employed for questions measuring various aspects of knowledge sharing. The responses options were labeled as "Strongly Disagree, Disagree, Neither Agree or Disagree, Agree and Strongly Agree" for more clarity, rather than using numeric labels (Thayer-Hart et al., 2010, p. 10). Open-ended questions were used for several measures to accommodate responses that might not have been anticipated (Thayer-Hart et al., 2010).

Qualtrics (an online software subscribed to by the University) was used as the platform to deploy and manage the survey. This tool provides a password-protected individual account for data collection, and the data can only be accessed by the researcher. The survey questionnaire had the informed consent page as Question 1, and the rest of the instrument was divided into two sections, with 25 questions in total. The first section had five questions on the key respondents' professional backgrounds, in order to identify that each respondent was qualified to take the survey. This safeguard assured that the survey was based on a representative sample, to support the validity of the survey and to evaluate any possible threat to the survey's validity. The five questions in the first section were about:

1) The geographic region of the respondent's organization in (North America, South America, Europe, Africa, Asia, Others)

2) The participant's gender type

3) The participant's age

4) The number of years that the participant has worked in the organization, and the nature of his or her job

5) The participant's experience as a supervisor of other employees

The second section of the questionnaire consisted of 20 close-ended questions. Some questions had fill-in options and some questions provided answer choices using a five-point Likert scale system. There were five questions in each of the four different categories: behavioral, cultural, social and technological. Some questions consisted of several sub-sections about knowledge seeking, knowledge sharing and retention. The questions in the survey instrument were limited to a moderate and appropriate length, to avoid creating fatigue in the respondents, while still generating sufficient measurements of the study constructs (Fife-Schaw, 2006). The full survey questions can be found in Appendix D.

Respondents

This study was conducted with employees at all position levels, from the 144 Association of University Presses' member organizations, who were subscribed to at least one of the AUP's two moderated listservs - the General list and the Directors list - that are closed to outsiders. Self-selecting sampling was used, so their participation was voluntary. The respondents were all over 18 years old and included both genders. The AUP requested the right to review the survey questions before distributing the survey through the listservs on behalf of the researcher, as they would not provide the actual list of their subscribers to an outsider.

Therefore, the sampling frame was derived from the two email listservs monitored by the AUP's Director of Research and Communications, with the following criteria: (a) all employees (1,200) who had already voluntarily signed up for the General email listserv, and (b) the directors (147) who had already voluntarily signed up for the Director email listserv. The population (1,347) of the study was determined from the total number of names on the two listservs combined, as provided by the AUP.

An internet-based survey method was used for delivering the survey to collect quantitative data about this specific population, because it was the most effective and efficient way to provide all members of the defined population with an opportunity to respond. As the member presses are located in different regions across the globe, it was not feasible for the researcher to administer the survey through direct contract or via postal mail or telephone. The use of the Internet facilitated the participation of the individual employees of the presses, to access and complete the survey.

On behalf of the researcher, the AUP's Director of Research and Communications sent out the survey invitation email with the survey link on February 7, 2018 to her constituents on the two listservs. A reminder to encourage participation was sent out on these two listservs via the same director on February 14, 2018, two days before the survey was closed. After the survey was conducted, 123 completed responses were collected. The common characteristic across all of the respondents was that they were listserv subscribers employed by an AUP member organization, and were contacted using their university press email addresses. The collected dataset was then cleaned up and analyzed using the statistical software SPSS through a subscription provided by the University of Tennessee. Different types of statistical tests were performed. The findings were presented in tables to provide the snapshots of the research results. The details of the quantitative survey data analysis and findings are presented in Chapter Four.

Compliance

Prior to collecting the data for the study, the researcher completed the required online training and obtained a certificate from the Institutional Review Board (IRB) to ensure compliance with the institution's policies and procedures for conducting ethical research with human subjects. After the survey questions were designed, the researcher sent the questionnaire, the invitation to take the survey and a description of the data collection procedure to the

University of Tennessee's Institutional Review Board in December 2017 for their approval, to ensure that the ethical standards for respect, justice and participant benefits were upheld by the study. The IRB approved the study in January 2018, prior to the initiation of data collection on February 7.

A critical step in the study was to obtain the informed consent of every participant to certify that they understood and acknowledged the benefits and risks associated with the survey. As the survey was self-administered online, the informed consent (Appendix A) included a statement ensuring the confidentiality of the responses and was presented as Question 1 on the homepage of the survey. Participants taking the survey had to click on the button labeled "Yes, I agree" in order to continue to the demographics section questions associated with the survey. Participants were also assured that they could withdraw from the study at any point in the survey if they wished to do so.

This web survey mode of data collection provided a convenient, cost-effective and secure (regarding privacy) method for obtaining responses from participants (Couper, 2011). It also provided for an easy extraction of the data into data analysis software such as *Statistical Package for the Social Sciences* (SPSS) (Carbonaro et al., 2002). The key point is that research subjects self-selected to take part in the research and completed the survey voluntarily. They were not approached directly by the researcher.

Philosophical Assumptions and Research Design for the Qualitative Portion

A qualitative research approach tries to explore and understand the meanings individuals ascribe to a social problem. Data are typically collected in the participant's setting, using methods that allow for emergent questions and insights. Qualitative data analysis involves an inductive process that generates themes that evolve from the particular to more general levels.   The

researcher interprets the meaning of the data (Creswell, 2013). Social constructivism or interpretivism underlies qualitative research approaches (Lincoln & Guba, 1985). The basic generation of meaning arises during the interaction with a human community. The value of this type of research approach is the inductive process with a focus on the specific situation or people involved (Maxwell, 2009).

The philosophical assumption in qualitative research is mainly related to interpretivism. The interpretivist/constructivist paradigm grew out of phenomenological philosophy, and has the intention of understanding "the world of human experience" (Cohen & Manion, 1994), suggesting that "reality is socially constructed" (Mertens, 2005). The interpretive/constructivist researcher tends to rely upon the "participants' views of the situation being studied" (Creswell, 2013). Constructivists do not generally begin with a theory, but instead they "generate or inductively develop a theory or pattern of meanings" (Creswell, 2013) throughout the research process. Interpretivists contend that only through the subjective interpretation of and intervention in reality can that reality be fully understood. The study of phenomena in their natural environment is key to the interpretivist philosophy. They acknowledge that there may be many interpretations of reality, but these interpretations are in themselves a part of the scientific knowledge they are pursuing (Smith, Flowers & Larkin, 2009).

There are five different research designs for qualitative research, which encompass a continuum from a narrow to a broad focus (Creswell, 2013): narrative, ethnography, phenomenology, case study and grounded theory. For this research study, phenomenology was chosen because phenomenological research is the study of the ways a person's world is formed in part by the person who lives in it (Fischer & Wertz, 2002). This approach is concerned with the lived experiences of people regarding a phenomenon of interest, such as the participants'

experiences with knowledge practices, which is being studied for this research project. The emphasis is to describe personal perspectives and interpretations. An interview in some form is the main method used in Phenomenology research (Moustakas, 1994; Giorgi, 2009). For this study, in particular, Flanagan's (1954) Critical Incident Technique (CIT) was used as the interview process. The application of the CIT for the interviews was based loosely on the time-line approach used in Dervin's 1983 sense-making research. In individual interview sessions, the research participants were encouraged to talk about their past incidents instead of answering direct questions.

Data Collection Procedure for the QUAL Study - Interviewing

For the qualitative research portion of data collection, open-ended questions for identifying critical incidents in participants' knowledge practices were used in the interviews. A purposeful sampling method was used to recruit participants by sending an invitation email to the key executives of AUP member presses, via the AUP's Directors listserv. The approval from the University of Tennessee's Institutional Review Board was obtained in February 2018, for the subject recruitment process, the invitation email, the interview guide and the consent form. The invitation email covered the goal of this research project, who was responsible for this research, any possible risk or benefits to participants, and that participation was voluntarily and anonymous. By the end of recruiting for the qualitative portion of the study, six directors replied to the researcher in order to participate in the first round of interviews, and two more directors responded to the researcher's invitation for the second-round interview.

Interview Development/Instrument

McCracken's (1988) long-interview research method, which uses the researcher as the research instrument, was used in this project. In the process of data collection through interviews,

the researcher serves as the instrument via social interaction, for entering into the world of the interviewee about the phenomena in question. For this study, the phenomenon of interest was critical incidents in their past experiences related to knowledge practices in their work setting. The process of observation and interviewing using appropriate questions had an important impact on this research. During the interview process, the researcher talked as little as possible so as not to impose her own concepts or judgments on the participant's stories, but instead she gently guided the participant through the discussion (Morrison et al., 2002). In order to guide the participants through the interviews to capture their world views in an unobtrusive way, the researcher developed an interview guide (Appendix B) for her reference during the interview process. The guide included an outline of the main issues to be explored using open-ended questions. The use of this interview guide allowed the researcher to remain free in building a conversation with the participants, while ensuring consistency in the kind of information that was obtained from the selected group of participants by asking everyone the same questions (Patton, 1990).

Interview Guide/Protocol Development

A semi-structured interview guide (Appendix B) was developed to ensure consistency in the approach by which all of the interviews were conducted. A prepared interview guide/protocol serves "...to ensure that the same general areas of information are collected from each interviewee; this provides more focus than the conversational approach, but still allows a degree of freedom and adaptability in getting information from the interviewee" (McNamara, 2009). The semi-structured guide offered a balance between the flexibility of an open-ended interview and the focus of a structured ethnographic survey (Stuckey, 2013) in gathering focused qualitative textual data.

The interview questions were designed after conducting a review of the knowledge management literature, such as articles from *The Journal of Knowledge Management*. Flanagan's

Critical Incident Technique was adopted for questions in all sections to prompt the recall of personal experiences in memorable past incidents.

A pilot study is a small-scale preliminary study conducted to pre-test a particular research instrument (Van Teijlingen & Hundley, 2001). To ensure face validity, a limited pilot study was conducted with several librarians who had closely worked with the University of Tennessee's University Press to assess the timing of the interview, and which questions worked and which did not.

The structure of the Interview Guide (Appendix B) included four sections: Section A covered general information about the participant's access to and use of information and knowledge resources; Section B dealt with insights from the participant's experience – lessons learned, best practices, and conclusions and recommendations for consideration by others; Section C allowed for additional comments and feedback; and Section D served as a closing stage of the interview. Section A was mainly for warming up the social interaction and asking about personal experiences and critical incidents in knowledge seeking and sharing. Section B focused on the participant's perception about knowledge sharing in their office environment. Section C and Section D contained probes on any issues that the researcher missed or that participants wanted to share.

The Use of the Critical Incident Technique (CIT) in Interviewing

Interviews were conducted using John Flanagan's (1954) Critical Incident Technique (CIT) for qualitative data collection, which was designed to gather the participant's most memorable experiences. The CIT harvests descriptions of events that are remembered by users, and is widely used as a research technique for the identification of organizational problems (Zach, 2005). The technique can be customized by the researcher as needed, to suit the aims of the investigation. A critical incident is defined as "any observable human activity that is sufficiently complete in itself

to permit inferences and predictions to be made about the persons performing the act" (Flanagan, 1954). The CIT has been used in a variety of studies, including information-seeking behavior (Zach, 2005) in library science and communication (Radford, 1999) as well as in organization studies, focusing on factors affecting the performance of managers and employees (Breunig & Christoffersen, 2015). The critical incident data would be more precise and more usable than opinion poll data (Church, 2018).

During this study's interviews, participants were asked to describe from their perspectives a successful past knowledge-sharing incident, an unsuccessful past knowledge-sharing incident, and the factors that made each incident either successful or unsuccessful. They were also asked to provide their definition of "successful" and "unsuccessful," so the researcher could understand how the participants made sense of positive or negative incidents. This approach is useful in understanding the related behavior critical to complex situations, by collecting data for fact-finding and reflecting on professional practices (Hettlage & Steinlin, 2006).

Flanagan's Critical Incident Technique allows interview data to be sorted into patterns and then summarized descriptively (Radford, 1999). Using CIT to focus on specific incidents, it de-emphasizes the inclusion of general opinions about management and working procedures. There are a variety of practical uses for developing and interpreting the research results (FitzGerald, Seale, Kerins, & McElvaney, 2008) by sorting interview data into patterns or relationships for summarization and description (Radford, 1999). In its application, the CIT provided procedures "for collecting direct observations of human behavior in such a way as to facilitate their potential usefulness in solving practical problems" (Flanagan, 1954).

Determining Sample Size

In qualitative research, sample sizes should not be so small that it is difficult to achieve saturation, nor so large that it is difficult to undertake a deep case-oriented analysis (Onwuegbuzie & Leech, 2007). To estimate the number of samples (conducted interviews, in this case) needed for a non-probabilistic, purposive sampling approach, the standard criterion is theoretical saturation. This is the point at which no new information or themes are observed in the data (Mason, 2010), and serves to identify an adequate sample size in qualitative inquiry (Guest, Bunce & Johnson, 2006). To determine the qualitative power analysis, a literature search for guidelines on appropriate sample sizes led to three scholars' determinations of appropriate, specific sample sizes for different qualitative research approaches (Onwuegbuzie & Leech, 2007).

For phenomenological studies, Morse (1995) indicated that at least six participants are needed. Creswell (1998) recommended conducting between five and twenty-five interviews for phenomenological research. Kuzel (1992) recommended performing six to eight interviews for a homogeneous sample, such as the directors participating in this research project. Therefore, as an audit trail, the researcher stopped the first round of interviews after conducting the sixth interview, to review all transcripts. From a preliminary analysis on all six interview transcriptions, the researcher found that the emergent themes had hit the saturation point. To confirm that saturation had been achieved, the researcher interviewed two more directors in a second round of interviews that also included an experimental element, which was giving the definitions of "implicit knowledge" and "tacit knowledge" to the interviewees, prior to conducting the interview. This slight change for the final two interviews was done to test if a related emergent theme did exist, in order to conclude the qualitative data collection stage.

Interviewing Procedure

After obtaining the permission of the AUP to conduct the research with its members, and obtaining the approval notification from the Institutional Review Board in February 2018, the researcher prepared the interview procedure. On behalf of the researcher, the AUP posted the recruiting email on the listserv for Directors in early May 2018. Six directors replied off the list to the researcher to schedule their interviews. A second round of interviews was needed, when two more directors agreed to participate, upon receiving the researcher's individual invitations sent to several directors in different countries. All participants (five males and three females, all over 18 years old) were from the United States. The profiles of the interviewees, including their location, their organization size and their publishing focus, are provided in Chapter Four.

Interviews were done from May to June 2018 prior to and after the AUP's 2018 annual conference. The interviews were conducted directly by the researcher at the interviewee's choice of location and were administered either by phone or online using a password-protected University of Tennessee Zoom account online meeting platform. In total, 60% took place on the phone, 20% were online using Zoom, and 20% were in-person interviews. Each interview lasted about 30 minutes. All interviews were audio taped with the interviewee's consent. The style of the semi-structured interview (Arksey & Knight, 1999) was used, with a prepared interview guide that served as a general guideline, as described in detail above.

Prior to the interview sessions, the interviewees signed and returned by email the consent form (Appendix A, about participating in the interview and agreeing to be recorded) to the researcher, via the University of Tennessee's Vault system. The Vault system is a secure file-transfer service that allows users to transfer files via encrypted HTTP and keep them securely in an encrypted data storage. All signed consent forms were then stored on a USB drive named "H".

The drive was then locked in the researcher's office cabinet that was only accessible by the researcher.

Each interview proceeded through a series of open-ended questions, with the interviewer probing the answers and testing ideas from previous interviews, as appropriate (Strauss & Corbin, 1998). Minor changes to the interview protocol were implemented, as some issues emerged during the project. The interviewer had the flexibility to add, drop or reword the question sequence as necessary. After all interviews were conducted and taped, the audio recordings were transcribed by a paid transcriber who signed a non-disclosure agreement. The average interview lasted 30 minutes. For online sessions, no video was included. All interviews were audio taped and all interviewees gave their explicit consent prior to being interviewed and to being audio recorded. The consent form explained the study context and the possible uses of the data. The interview data were anonymized in a way that neither the respondents themselves, nor other people they referred to in the interview, could be identified.

Each interviewee was made aware of the opportunity to obtain a copy of their own interview transcript, upon their requesting it from the researcher, to ensure the accuracy of the interview and to provide any additional points if desired. The electronic copies of the interview and the transcription were securely stored on the USB drive "H" in the researcher's locked office cabinet that only the researcher can access. The interview transcripts contained no information allowing them to be linked back to the interviewee. To protect the privacy of the responding participant, the organization name was not addressed by the researcher during the interview and any organization names mentioned by the interviewees in the transcription were redacted before the analysis process. To protect the interviewees' privacy and for filing purposes, instead of using the interviewee's name and job title, the interview session was referred to as "DISS interview_1" (for

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the first interview) and the interviewee was addressed as "Mr. [Initial]" or "Ms. [Initial]," and so forth.

After the interviews were conducted and transcribed, the transcriptions were uploaded into QDA Miner, a qualitative data analysis software subscribed to by the University of Tennessee. In the data analysis stage, a categorization scheme was developed to summarize and describe the data in a useful manner, without sacrificing its comprehensiveness, specificity and validity (Flanagan, 1954). A simplified open coding scheme for identifying and classifying the critical incidents and explanations of category placements was used in this research project. The coding scheme contained two major theme categories: Content Themes and Rational Themes, with several subcategories (Radford, 1999). The details of the qualitative data analysis and findings are presented in Chapter Four.

CHAPTER FOUR

DATA ANALYSIS AND RESULTS

This chapter presents the data analysis process and the findings from both the quantitative and the qualitative research portions of the study. The quantitative research used a self-selecting survey questionnaire to collect data from AUP member presses' employees about different aspects of their knowledge practices. The qualitative research used purposive sampling, for which the researcher served as the instrument to collect data by interviewing AUP member presses' directors to assess critical incidents in their knowledge practices.

Quantitative Research Results

The Rate of Return

The electronic survey was completed by 123 of 1,347 possible participants. The rate of return, i.e., the proportion of questionnaires that were completed and returned (Antonius, 2003), was calculated as 9.13% of the population number (1,347 was the total number of subscribers on the two AUP listservs combined). Sixteen participants completed the informed consent page and the demographics section, but did not proceed to the survey. After these blank attempts were removed using the Listwise deletion (complete-case analysis) technique, the actual sample number was 107.

After further investigation using the respondents' IP addresses to identify their affiliated organization's size, one survey's IP address indicated that it was submitted from a location where the university press was closed in 2002. This record was removed because changes in technologies that have occurred since 2002 are likely to have had impacts on knowledge practices, suggesting that this particular submission was a faulty response that did not fit the parameters of this research project. All participants who answered questions presented after the demographics section were

included in all analyses using the pairwise deletion (available-case analysis) technique, even if they chose to skip some questions in other sections. Therefore, the ultimate sample size for the quantitative analysis was 106 completed surveys, yielding an adjusted rate of return of 7.87%. Given the fact that 90% of AUP's members are from North America, and that all completed surveys were from North America, the return rate could be calculated at as high as 8.7%.

Data Cleaning Process

After the survey was conducted, the data cleaning and analysis processes of editing and coding (Zikmund, Babin, Carr & Griffin, 2008) were followed. The survey's raw data was downloaded from Qualtrics and imported into the University of Tennessee's data analysis software subscription platform - *Statistical Package for the Social Sciences* (SPSS). SPSS is a popular software for editing and analyzing all sorts of data in the social sciences (Suresh, 2015). Data were stored in a matrix that resembles a spreadsheet file with rows and columns. Each row represented a particular respondent's score on each variable, and the data in each column was set up as a separate, defined variable for which there was a value for every respondent.

The initial data cleaning, i.e., error checking and verification (Zikmund, Babin, Carr & Griffin, 2008), found that several participants did not fully complete the survey, dropping out at various questions. In order to preserve a larger effective sample size, a mixing of listwise and pairwise deletion (Peugh & Enders, 2004) was used to handle the missing data issue. The listwise deletion eliminated an entire sampling unit from the analysis, even if only a single response was missing. In contrast, the pairwise deletion allowed the data that the respondent did provide to still be used in the statistical analysis (Zikmund, Babin, Carr & Griffin, 2008).

Therefore, the listwise deletion technique was applied in the first cleaning cycle, because those responses had finished only the Demographics section. Therefore, surveys with all blank

responses after Question 6 were treated as incomplete. These responses were removed from the analysis.

If there were any completed responses on a particular survey for the measures beyond Question 6, the pairwise deletion technique was applied to those surveys after the first cleaning cycle was done. The procedure did not include a particular variable when it had a missing value, but it did include the response in the analysis of all other variables with non-missing values. For example, if a case contains three variables: VAR1, VAR2, and VAR3 and has a missing value for VAR1, this would not prevent some statistical procedures from using the same case to analyze variables VAR2 and VAR3 that do have values present. Hence, after this handling of any missing-data issues, the total number of the responses to the survey was 107. In accordance with the guidelines of the statistical prior power analysis, having 107 cleaned-up and usable questionnaires exceeded the minimum required specification of 98, for a 90% confidence interval with an 8% margin of error. Therefore, this study's actual sample size allowed for the use of a 90% confidence interval with an 8% margin of error.

When the survey instrument was designed, the main concern was to protect the respondents' privacy and to maintain full confidentiality. Therefore, no questions in the survey asked the individuals to identify themselves or disclose their organization names. However, in the later data-analysis stage, the researcher wished to assess if there were any significant differences by organization size in the survey results. In order to determine this, an intermediate method was used to provide a basis for categorizing the responses by different organization sizes. First, the researcher submitted an amendment to the IRB for their approval of the amended procedures. After it was approved, the researcher created Spreadsheet "A" with a list of all university press members from the AUP website. The organization size of each member was defined, based on

the number of employees listed on the member presses' websites and the AUP's 2017 and 2018 member directories. The university presses were then classified into three categories: small (less than 25 employees), medium (25 to 49 employees) or large (50 or more employees).

The researcher then located each IP address in the metadata section of each survey response by using the IP Checker tool (https://ipinfo.info/html/ip_checker.php). The IP address was in the metadata section that was attached to each survey response and was used to identify the host name's ownership information and geolocation data, which allowed for the identification of the organization. There was no way to identify who filled out the survey or the serial number of the computer device the respondent had used. This was the point in the analysis when the one aforementioned survey was found, from the university press location that closed in 2002, and it was removed from the dataset. In total, the final sample size for analysis was 106.

Second, the researcher created a Spreadsheet "B" and downloaded only the IP addresses from the survey dataset into Spreadsheet "B". A column titled "organization size" was created in Spreadsheet "B" and the researcher keyed in variables of "large," "medium" and "small" for each survey response by matching each IP address and the corresponding university's organization size (i.e., large, medium or small) from Spreadsheet "A".

Third, the researcher created a variable column for "organization size" in the survey dataset inside SPSS and keyed in each field from each survey response with the corresponding values from the size groups "large", "medium" and "small" by matching the IP address in Spreadsheet "B." After this "organization size" column was filled, the IP address column in the SPSS data set was removed before the process of survey data analysis was started. Therefore, no IP address was still attached to the survey response prior to the initiation of the final data cleaning process, so the survey results were kept discreet and unidentifiable. After the data cleaning process was

completed, the data analysis stage began, and the findings could then be reported in an aggregated format.

This survey questionnaire contained both close-ended questions on the participants' behavior related to knowledge practices, and some semi-structured open-ended questions such as Question 9, Question 10, Question 24 and Question 26, to probe their opinions using write-in answer options to give the participants an opportunity to reflect more deeply than with the provided answer choices. These written-in phrases as responses were reviewed for any typing errors and were coded into categories for the quantitative analysis in SPSS.

Developing a Data Codebook

The SPSS data file generated a codebook (Appendix G) in order to communicate the research results clearly, and to make the data understandable for proper interpretation (Zikmund, Babin, Carr & Griffin, 2008). This codebook included information about each of the variables in the dataset, such as what label name was used to represent each variable, how each variable was measured (e.g., nominal, ordinal or scale), how each variable was actually recorded in the raw data (i.e. numeric, string), each variable's unit of measurement, and what category each variable represented.

Beside the variables originally stored in the SPSS data file for the close-ended structure questions, the researcher also performed the code-building process for the open-ended semi-structured questions (Question 9, Question 10, Question 24 and Question 26) with variables such as organization size, work experience, job nature and write-in. The purpose of coding these questions was to transfer the meanings from the written responses into numeric codes accurately, by grouping individual responses into a few general categories of answers (Zikmund, Babin, Carr

& Griffin, 2008). Therefore, an additional coding scheme for the questions with write-in options in this research was built.

Data Analysis Using SPSS

After cleaning up the data, the researcher ran the SPSS software for statistical analysis. SPSS (Statistical Package for the Social Sciences) is a data management and statistical analysis tool, subscribed to by the University of Tennessee. SPSS was chosen because of its versatile data-processing capability that allows many different types of analyses, data transformations, and forms of output. It has been widely used in social science research (Bala, 2016).

In the context of small-scale survey evaluation like this research project, SPSS was used for electronically storing the questionnaire data in a spreadsheet-like table, calculating the frequency distributions of multiple-choice question responses, generating descriptive statistical data for question responses, such as frequency counts for closed questions, creating graphical presentations of questionnaire data for reporting purposes, exploring relationships between the responses to different questions, and collating the write-in responses.

The use of SPSS was employed to interpret the data, in order to use the results to answer the research questions for this study, listed below:

RQ1: What factors influence individuals' knowledge-seeking and knowledge-sharing in knowledge-intensive firms such as university presses?

RQ2: In what ways do knowledge-intensive firms like university presses apply and retain their operational knowledge in their organizations?

RQ3: What types of knowledge barriers do university presses encounter in their daily processes?

A frequency analysis was run to identify initial data errors, including spelling errors, outliers, and missing data. The median, mean, and mode were compared to test the normality of the distribution of the data. Finally, descriptive statistics were run to present the direct findings and to prepare for the more in-depth analyses.

The researcher used descriptive statistics to analyze the responses for the knowledge sharing factors in the behavioral, cultural, social and technology sections. In addition, statistical tests were used in order to assess the statistical significance of any differences in the response levels to various measures.

Results

The quantitative portion of this study was a survey made available to all levels of employees of all member presses of the Association of University Presses (AUP). The Association protected the listserv subscribers' privacy and would not provide their subscribers' email addresses to an outsider. As the Association's listservs are moderated and are closed to outsiders, at the researcher's request, the Association distributed the survey invitation on her behalf. The Association reviewed the survey questions before forwarding the participation invitation email to their subscribers.

The potential respondents were derived from the two email listservs monitored by the Research and Communications Director of the AUP, with the criteria: 1) all individuals (1,200) who had voluntarily signed up to the General email listserv, and 2) the university press directors (147) who had voluntarily signed up to the Directors email listserv. Therefore, the population (N= 1,347) of the study was determined based on the total number of names on these two listservs. After the data cleaning process was done, the number of valid, completed questionnaires was reduced to an n of 106. The structure of the questionnaire divided the measures into five sections

– demographics, behavioral factors, cultural factors, social factors and technological factors. Some respondents chose not to answer some questions in various portions of the instrument. Descriptive statistics were obtained for all questions, to provide a snapshot of the data for gaining meaning and insights (Watkins & Gioia, 2015).

Statistical tests were applied to determine if there were significant relationships between categorical variables. Chi-square tests were conducted (see Appendix F) on variables such as organization size and age range. The findings were not statistically significant. Questions in the cultural factor section were mostly Likert-type scales used for scaling survey responses. Therefore, in this section, the Cronbach's alpha test was applied to assess these questions for internal consistency. A composite score was then used to express how closely related the set of similar questions were as a group.

Profiles of the Respondents

The survey link and the invitation email were delivered to the specific population by the Association of University Presses via their two closed listservs. Because these listservs are restricted to only press employees, no screening question was needed to check the qualification of the respondents. Instead, Question 1 of the survey was the informed consent page requiring their agreement. Those who answered "No" were automatically terminated from the survey.

Question 2 to Question 6 were about the respondents' demographics. Question 2 asked about the geographical region in which the participants were located. All respondents were from North America (n = 106 or 100%), with eight participants (7.6%) located in Canada and 98 participants (92.4%) from the United States. About 88 participants (83%) identified as females, 17 participants (16%) were males, while one participant (1%) selected "prefer not to answer" for Question 3 about gender. The high percentage of female participants aligns with the findings from other social

science studies, that women are more inclined than men to participate in surveys (Smith, 2008).

Question 4 about the respondents' age categories found that the majority of respondents (42 people or 40%) were older than 50 years old. Twenty participants (19%) were between 40 and 49 years old, 29 participants (27%) were 31 to 39 years old, and 15 people (14%) were between 18 and 30 years old.

Question 5 was a write-in question that asked about how long respondents had worked in their current positions, and about the general nature of their jobs. Many respondents indicated that they filled multiple roles in their organizations. In coding these write-in responses, the researcher honed in on the key role mentioned in their statements, to determine the main job classification category for the purpose of data analysis. The write-in data were coded into SPSS to facilitate statistical analysis. The most frequently-mentioned job titles were from Acquisitions (28 participants or 26.4%), followed by Marketing and Sales (22 participants or 20.8%).

In terms of their number of years of work experience in their current positions, the largest proportion of respondents had held their job from between one to five years (38 people or 36%), while 21% (or 22 people) had been in their jobs from between five to less than ten years. Interestingly, a smaller proportion of respondents had been in their jobs from ten to under 15 years (15 people or 14%) versus those who had held their jobs for 15 or more years (30 people or 28%). University presses had generally stable workforces, with only one participant having less than one year's experience on the job.

Question 6 sought to identify how many respondents had supervisory responsibilities, by asking about the number of staff members each participant supervises. The majority of respondents (65 people or 61%) were supervisors of other employees, while 41people (39%) did not have supervising duties. About half of all respondents (52 supervisors or 49%) were responsible for

supervising fewer than ten staff members, while only 13 supervisors (12%) supervised between ten and 50 staff members. No respondents supervised more than 50 people (See Table 1_a).

By using each submitted survey's metadata, in a process described in detail earlier, each respondent's affiliated organization size was identified. Three types of organization sizes were defined: small (fewer than 25 employees), medium (between 25 to 49 employees) and large (50 or more employees). The analysis reveals that, out of 106 respondents, the majority of the respondents worked in small organizations (55 people or 52%), followed by 33 (31%) working in medium-sized organizations, and 18 (17%) employed by large-sized organizations (See Table 1_b).

Table 1_a: Demographics (N = 106)

Variable Name	Category	Frequency	%
Region	North America	106	100
	South America	0	0
	Africa	0	0
	Europe	0	0
	Asia	0	0
	Others	0	0
Gender	Male	17	16
	Female	88	83
	Prefer-not-to-specify	1	1
Age	Above 18 and younger than 30	15	14
	31 – 39	29	27
	40 – 49	20	19
	50 and above	42	40
Job Nature	Administration	12	11.3
	Editorial	9	8.5
	Acquisition	28	26.4
	Design & Production	18	17
	Marketing & Sales	22	20.8
	Business Services	9	8.5
	Technical Services	6	5.7
	Non-disclosed	2	1.9

Table 1_a: Demographics (N = 106) (Cont'd)

Variable Name	Category	Frequency	%
Years Working for the Press	Less than one year	1	1
	1 year to less than 5 years	38	36
	5 years to less than 10 years	22	21
	10 years to less than 15 years	15	14
	Over 15 years	30	28
# of Staff Supervised	Less than 10	52	49
	10 to 50	13	12
	51 to 100	0	0
	More than 100	0	0
	I do not supervise	41	39

Table 1_b: Demographics (N = 106)

Variable Name	Category	Frequency	%
Organization Size	Large (>50)	18	17
	Medium (25 - 49)	33	31
	Small (<25)	55	52

Research Question 1: Factors Influencing Individuals' Knowledge-Seeking and Knowledge-Sharing in University Presses

The research survey was structured with sections focusing on behavioral, cultural, social and technology factors. Research Question 1 is the foundation for this study. Therefore, factors influencing the knowledge behavior of individuals were examined through multiple questions across these four focus areas, because all of these areas are influential to some degree in shaping individuals' knowledge practices.

In general, the most influential factors on university presses' employees' knowledge-seeking and knowledge-sharing practices were identified as the existence of an open culture, accompanied by high individual self-motivation to share, and a healthy level of trust among coworkers. The following exposition provides the statistical findings from each survey question that is related to this research question.

In the behavioral factors area, Question 7 explored how the respondents acquired the skills and expertise needed to perform their jobs. The most frequently-occurring answer was through self-learning (38 people or 35.8%). About a third of respondents (35 people or 33%) indicated that they acquired skills and expertise from colleagues, either supervisors or coworkers in the organization. About a fifth of respondents cited prior experience, having already learned skills at their previous job (21 people or 19.8%). Formal sources of learning were selected by relatively few respondents (seven people or 6.6%). Only five people (4.7%) chose "elsewhere" (See Table 2).

Table 2: (Q7) How did you acquire the skills and expertise that you use in your job?

Category	Frequency	%
From supervisors or coworkers in this organization	35	33
Through self-learning	38	35.8
Through formal training	7	6.6
At my last job	21	19.8
Elsewhere	5	4.7
Total (N)	106	100

To investigate how frequently the university press staff interacted with other members of their organization, Question 8 addressed how often respondents need to ask for information from their coworkers in order to perform their daily jobs. There were 105 responses to this question. Almost half of the respondents stated that they have to ask their colleagues for information on a daily basis (49 people or 47%), and another 38% (40 people) do so occasionally. Eleven people (10%) seek information from their coworkers once a week, while one person said he/she sought out colleagues for information once a month. Only four people (4%) indicated that they "never" seek information for their job from coworkers (See Table 3). Therefore, the knowledge-sharing process among university press staff occurs daily.

Table 3: (Q8) How often do you need to ask for information from your coworkers to perform your daily job?

Category	Frequency	%
Never	4	4%
Occasionally	40	38%
Once a week	11	10%
Once a month	1	1%
Daily	49	47%
Total (N)	105	100%

In the culture focus section, Question 12 used several statements to examine the participants' perceptions about their reasons for or motivations to share knowledge. Overall, all five statements in this measure showed high frequency levels for the top two positions on the scale, which were "strongly agree" and "agree." The two reasons that drew the strongest level of agreement were that knowledge sharing was perceived to be important (95%), and that respondents were happy to share knowledge to improve the organization's daily operations (97%). Respondents also agreed with the knowledge-sharing reasons that they were important in their organizations (87%), and that they had many connections in their organizations with which to share (80%). Respondents did agree with the idea that they wanted their supervisors to see them as good employees, but their reaction to this reason was less enthusiastic (56%) (see Table 4).

Table 4: (Q12) In my organization, I share my knowledge with co-workers because

Categories	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total (N)
I am an important part of my organization's network	4	2	6	44	39	95
%	4%	2%	6%	46%	41%	100%
I have many connections in my organization to share knowledge	3	5	11	46	30	95
%	3%	5%	12%	48%	32%	100%
I am happy to share my knowledge at work in order to improve my organization's daily operations	3	0	0	29	63	95
%	3%	0%	0%	31%	66%	100%
Knowledge sharing is important	3	0	2	22	68	95
%	3%	0%	2%	23%	72%	100%
I want my superior to think I am a good employee	2	8	32	29	24	95
%	2%	8%	34%	31%	25%	100%

Question 13 explored the perceptions of the university press staff members, about whether their management encourages employees to share work knowledge and experiences, by providing informal activities and opportunities to communicate. Ninety-five people answered this question. A high percentage of respondents agreed that their management created circumstances conducive to knowledge sharing during informal activities. Twenty-five people (26.32%) strongly agreed, and 48 people (50.53%) agreed with this statement. However, not all respondents felt that their management facilitated knowledge sharing in informal ways; 12.6% disagreed or disagreed strongly with this statement. (See Table 5).

Table 5: (Q13) My organization's management encourages informal activities and opportunities to communicate/share experiences and work knowledge.

Category	Frequency	%
Strongly agree	25	26.32
Agree	48	50.53
Neither agree nor disagree	10	10.53
Disagree	9	9.47
Strongly disagree	3	3.16
Total (N)	95	100

Question 14 asked the respondents about their perceptions of formal activities offered by their organizations for sharing knowledge and experience. The same number of respondents completed this question as for Question 13, but the percentage answering "strongly agree" dropped and the percentage selecting "agree" increased. However, almost twice as many respondents disagreed that their organizations provided formal knowledge-sharing activities (23.2%), as compared to the disagreement level for informal activities (12.6%) measured in Question 13. (For full results, see Table 6).

Table 6: (Q14) There are formal activities such as training sessions, forums and meetings in the organization to share knowledge and experience.

Category	Frequency	%
Strongly agree	16	16.84
Agree	54	56.84
Neither agree nor disagree	3	3.16
Disagree	15	15.79
Strongly disagree	7	7.37
Total (N)	95	100

Two-part statements were asked in Question 15 to examine the respondents' perceptions of the value of lessons learned. One statement of the pair asked about learning from failed projects, while the second statement assessed learning lessons from successful projects. Ninety-five respondents answered this question. The frequency counts and percentages for each statement under each response category were the same. The highest frequency counts (54%) were for "Agree," followed by over a quarter of respondents (27%) who expressed strong agreement. These results indicated that most university press staff valued the lessons learned from the projects in their organizations, regardless of whether the projects were successful or failures (See Table 7).

Table 7: (Q15) In my organization

Categories	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree	Total (N)
Lesson learned from failed projects are considered valuable	6	3	9	51	26	95
%	6%	3%	9%	54%	27%	100%
Lesson learned from successful projects are considered valuable	6	3	9	51	26	95
%	6%	3%	9%	54%	27%	100%

Another two-part statement was used for Question 16, to explore the staff's perceptions of their coworkers' willingness to share. There were 95 responses to this question. The results for these statements showed interesting findings. A high number of respondents considered that their coworkers in their organizations were extremely likely or moderately likely to share willingly with each other about their work experience on a regular basis. However, for the paired statement about their organization's willingness to recognize publicly or reward activities associated with lessons learned, more responses shifted over to moderately likely and neither likely nor unlikely. There is an implication that staff were willing to share about their work experiences with others, but they perceived that relatively few university presses had implemented reward systems to encourage this kind of behavior (See Table 8).

Table 8: (Q16) There is a willingness in my organization that

Categories	Extreme Likely	Moderate Likely	Neither Likely nor Unlikely	Unlikely	Extreme Unlikely	Total (N)
Co-workers routinely share work experience with each other	41	43	7	1	3	95
%	43%	45%	7%	1%	3%	99%
Activities associated with lessons learned are recognized publicly and/or rewarded by the management	9	34	28	17	7	95
%	9%	36%	29%	18%	7%	100%

Question 17 examined the social norm of the university presses. There were 95 responses to this question. About 62% of the respondents indicated that staff do engage in social activities after work hours, while only about 26% said their organizations do not socialize after work. (See Table 9).

Table 9: (Q17) Do you agree that staff, in your organization, do not have social activities after work hours

Category	Frequency	%
Strongly agree	11	11.58
Agree	14	14.74
Do not know	11	11.58
Disagree	56	58.95
Strongly disagree	3	3.16
Total (N)	95	100

Question 18 looked at member's perceptions of whether staff share about work experience at casual gatherings in the office. Ninety-five respondents answered this question. More than 83% of respondents (15.79% strongly agree and 67.39% agree) stated that their co-workers shared work experience in the hallways or in casual gatherings (See Table 10).

Table 10: (Q18) Do you agree that staff, in your organization, are eager to share work experience in the hallways or in casual gatherings

Category	Frequency	%
Strongly agree	15	15.79
Agree	64	67.37
Do not know	10	10.53
Disagree	6	6.32
Strongly disagree	0	0
Total (N)	95	100

Question 20 asked respondents about their own degree of motivation to share their knowledge and experience, and 93 responded to this question. Close to two-thirds of these respondents (62.4%) indicated they were very motivated to share, because their sharing would build a better company. Another 28% of the respondents indicated that they felt an average level of motivation, because they wanted to help their coworkers (See Table 11). This result indicated that a general culture of collegiality exists in the university press organizations.

Table 11: (Q20) How motivated are you to share your knowledge and experience?

Category	Frequency	%
Very unmotivated because I keep my job secret to protect my job	1	1.08
Unmotivated because I do not care what is going on in the company	0	0
Motivated on average because I want to help my co-workers	26	27.96
Motivated because I think my co-workers need me	8	8.6
Very motivated because I think sharing mine will build a better company	58	62.37
Total (N)	93	100

Question 21 was used to assess the level of trust among the staff. This question contained three statements and garnered 91 responses. Overall, a very high number of respondents either strongly agreed or agreed with these three statements. These results indicated that there was a strong level of trust among employees in the presses.

Sixty-four percent of the respondents agreed and 31% strongly agreed that they found their coworkers' information to be trustworthy. For the statement about whether their co-workers would help them out with their problems when asked, 46% of respondents agreed and 33% of respondents strongly agreed with that assertion. Forty-one percent of respondents agreed and 48% of respondents strongly agreed with the statement that their co-workers were both willing to help and would not deceive for their own profit.

However, the counts from the "agree" and "strongly agree" columns for the first two sub-statements dropped, while the counts for the neutral position increased. This shows that the respondents trusted that their coworkers would help them, but they had doubts that their coworkers could come to rescue them. When this answer aligned with a write-in response from Question 26, it indicated that only one or two staff members have the expertise to do the task. The increased counts for the "strongly agree" response for the last sub-statement, in comparison to the level for the previous two statements, indicated that most respondents believed in the sincerity of their co-workers (See Table 12). This measure generally reflected a good level of trust among coworkers.

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Table 12: (Q21) Do you agree or disagree with the following statements? (N = 91)

Categories	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I feel trustworthy with my coworkers ' information	1	0	4	58	28
%	1%	0%	4%	64%	31%
If I encounter problems in finishing my job, I know my coworkers will help me out when I ask	7	0	12	42	30
%	8%	0%	13%	46%	33%
My co-workers are willing to help and do not deceive for their own profit.	0	3	7	37	44
%	0%	3%	8%	41%	48%

Research Question 2: Ways that University Presses Apply and Retain their Operational

Knowledge in their Organizations

Research Question 2 was posed to explore the practices, in terms of procedures or technological means, for knowledge curation among university press staff. Therefore, survey Question 9 from the behavioral focus section asked respondents where would they look for the knowledge that they needed to do their jobs. One hundred respondents answered this question. Forty-six percent of the respondents chose to write in their answers. For the rest of the respondents, 24% of them said they would ask their team members, 18% of them chose their organization's central information system, 9% of them would use their own computers or hard drive, and only 3% of them would use paper-based documents (See Table 13).

Table 13_a: (Q9) Where would you look for knowledge that you need to do your work?

Category	Frequency	%
In paper-based documents	3	3%
In our team/department's members' minds	24	24%
In our central information system	18	18%
On my personal or workstation computer/hard drive	9	9%
Write-in response	46	46%
Total (N)	100	100%

A coding scheme was developed in order to analyze the write-in responses. The following table shows the coding scheme used and the counts for each code. Among the 46 write-in narratives, the highest count was for "all of the above" (57% of the 46 write-in narratives). This was followed by both "online searching only" and the "AUP listserv, AUP friends/mentors, The Scholarly Kitchen;" each of these answers was written in by 13% of respondents.

Comparing those respondents who chose one item to those wrote their own narratives, knowledge seeking through coworkers and the AUP were the most popular choices.

Table 13_b: (Q9) Write-In Answers

Code	Response Type	# Count	%
1	Ask coworkers only	1	2%
2	Online searching only	6	13%
3	Ask coworkers and self-document search	3	7%
4	AUP listserv, AUP friends/mentees, The Scholarly Kitchen	6	13%
5	Coworkers or outside the organization such as universities	1	2%
6	The organization's shared drive	1	2%
7	Team member's mind, central information system and my hard drive	2	4%
8	All of the provided choices in the question	26	57%
Total (N)		46	100%

Question 11 was used to identify if there were any documentation procedures in place. The question asked if the respondents depended on documented procedures to perform their jobs. Ninety-six respondents answered this question. Results for this question clustered toward the middle of the scale, with 7.29% of respondents strongly agreeing, 36.46% of respondents saying they agree, 23.96% of respondents being neutral, 26.04% of respondents disagreeing and 6.25% of respondents strongly disagreeing (see Table 14). Only a few respondents expressed a strong level of either agreement or disagreement, and the proportion who agreed with the statement was marginally higher than those who disagreed. Therefore, the results indicate that knowledge curation is not perceived as particularly important among the presses' employees

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Table 14: (Q11) I depend on documented procedures to do my work when I have questions in fulfilling my job tasks.

Category	Frequency	%
Strongly agree	7	7.29
Agree	35	36.46
Neither agree nor disagree	23	23.96
Disagree	25	26.04
Strongly disagree	6	6.25
Total (N)	96	100

In the Technology focus section, 91 respondents answered survey Question 22, which asked about whether documenting work knowledge was a required part of their current work practices. Only about one-third of respondents said it was "a must" to document their work knowledge in their organizations, while 67.03% of respondents said their organizations did not require this documentation. (See Table 15).

Table 15: (Q22) In your organization, documenting of work knowledge is a required part of your work practices

Category	Frequency	%
Yes, it is a must	30	32.97
No, it is not	61	67.03
Total (N)	91	100

Question 23 explored the level of availability of technology mechanisms and tools to share knowledge, and 91 respondents answered this question. The majority of respondents answered in the negative, with 58.24% saying they did not think these mechanisms and tools to share work knowledge were widely available in their organizations. Only 41.76% of them indicated that there are these kinds of aids for sharing work knowledge in their organizations (See Table 16).

Table 16: (Q23) Mechanisms and tools to share work knowledge are widely available in my organization.

Category	Frequency	%
Yes, it is widely available	38	41.76
No, it is not	53	58.24
Total (N)	91	100

Question 24 asked about respondents' use of specific tools and methods for knowledge sharing or curation. There were 87 respondents who answered this question, which was used to examine if the press staff rely more on in-person interaction or human-machine interaction for knowledge transfer. The largest proportion of respondents (42.53%) chose "Team Meetings," but 32.18% of the respondents chose to write in their own answer (See Table 17_a).

Table 17_a: (Q24) Do you use any of the following tools or methods to share or store knowledge, experiences or best practices within your company?

Category	Frequency	%
Colleague(s) (mentor/buddy/mentee)	9	10.34
Team meetings	37	42.53
Collaborative platform such as Google Doc, OneDrive, Drop Box	13	14.94
Social Media such as Facebook, Twitter	0	0
Write-In	28	32.18
Total (N)	87	100

A coding scheme was developed in order to analyze the write-in narratives for Question 24. The following table shows the coding scheme used and the counts for each code. Among the twenty-eight write-in narratives, the most frequently-occurring response was given by 32% of the respondents, who indicated that they use "All of the provided choices in the question." Two respondents indicated they used none of the provided choices. Across the entire collection of write-in narratives, the word "meetings" was used repeatedly. These results reflect that university press employees rely heavily on in-person interactions in meetings to share knowledge and best practices.

Table 17_b: (Q24) Write-In Answers

Code	Response Type	# Count	%
1	Co-workers, Meetings and Collaborative Platform	7	25%
2	Database, meetings, documents	2	7%
3	Shared Drives/Folders	2	7%
4	Co-workers and Meetings only	1	4%
5	Meetings and colleague relationships within the press	1	4%
6	We have a departmental Wiki, but very few people are comfortable using it.	2	7%
7	Co-workers, Meetings and online project management	1	4%
8	I write up comprehensive instructions for all the tasks I do, both for my own reference and as a record for other employees.	1	4%
9	All of the provided choices in the question	9	32%
10	None of the provided choices in the question	2	7%
	Total (N)	28	100%

Research Question 3: Types of Knowledge Barriers that University Presses Encountered

Research Question 3 is an ancillary question branching out from Research Question 1 and 2, to identify what context barriers or technology barriers that work against sound knowledge practices may exist in university presses. Survey Question 10 asked the respondents about the issues they experienced when they were unable to share or receive knowledge from their team members. Ninety-four respondents answered this question. The most frequently-chosen response was "Time limitation" (47.87%), followed by 11.7% of respondents who said that there was no support to share knowledge. The fewest respondents chose "No motivation to share" (3.19%). Some (8.51%) noted that the right tools were unavailable. As with the earlier measures, 28.72% of respondents chose to write in their own response (See Table 18_a).

Table 18_a: (Q10) What are the prohibitions in instances that you were unable to share o receive knowledge and/or best practices from your team members in your job?

Category	Frequency	%
Time limitation	45	47.87
No support to share	11	11.7
No motivation to share	3	3.19
No right tools available	8	8.51
Write-In	27	28.72
Total (N)	94	100

A coding scheme was developed in order to analyze the write-in responses for survey Question 10. The following table shows the coding scheme used and the counts for each code. Among the twenty-seven write-in narratives, the most frequently-given response (30%) was that there were "no prohibitions" that prevented knowledge sharing or transfer. Other respondents who wrote in provided various issues that were prohibiting knowledge flows related to their tasks. Two respondents did not understand the question, and only one respondent mentioned an issue with the culture of knowledge transfer. Other interesting findings were that the next two most frequently-occurring responses were that "coworkers are unavailable" and that there is a "lack of this kind of training or knowledge." If the two counts for the related codes "lack of this kind of training or knowledge" and "they don't really know how to do my job as I am the only person [who] knows" were tallied together, it would be the second-highest ranked result for this measure.

Table 18_b: (Q10) Write-In Answers

Code	Response Type	# Count	%
1	No prohibitions	8	30%
2	Lack of this kind of training or knowledge	3	11%
3	Too busy	2	7%
4	Coworkers are unavailable	4	15%
5	Depends on situations	1	4%
6	Do not know	2	7%
7	Difficult to access remotely	1	4%
8	No culture of knowledge transfer across silos	1	4%
9	All of the above choices	1	4%
10	Very rare occurrence	1	4%
11	Difficult coworkers who hoard knowledge in order to stay in power	1	4%
12	They don't really know how to do my job as I am the only person knows	2	7%
Total (N)		27	100%

Question 19 asked about the respondents' opinions on what the challenges are, in relation to sharing knowledge with coworkers in other departments. Sixty-eight respondents answered this question. The largest proportion of respondents (33.82%) considered the challenge to be that coworkers "did not perceive there is an urgent need" for the knowledge. More than a fifth of respondents (22.06%) noted that the challenge lies in the lack of an open-minded knowledge-sharing environment, and another 17.65% considered the challenge to be that their coworkers "did not know there is a knowledge need" (See Table 19).

Table 19: (Q19) From your view, what are the challenges of sharing knowledge with people from other sections of your company

Category	Frequency	%
Don't perceive there is an urgent need	23	33.82
Lack of open-minded sharing environment	15	22.06
Lack of trust of others' knowledge	8	11.76
No proper technological platform to share	10	14.71
Do not know there is a knowledge need	12	17.65
Total (N)	68	100

Question 25 queried the respondents about the biggest barrier for their storing the information they receive. Of the 81 respondents who answered this question, the majority (58.02%) chose to say that they were too busy or lacked the time, followed by the issue of dealing with a "poor information system/process" (27%). Only one respondent said, "I do not consider it is important" (See Table 20).

Table 20: (Q25) The biggest barrier for you to store information you received more efficiently and effectively is

Category	Frequency	%
Too busy, lack of time	47	58.02
Poor technology tools	6	7.41
Organization policy	5	6.17
Poor information system/process	22	27
I do not consider it is important	1	1.23
Total (N)	81	100

The last question (Q26) in the survey was an open-ended question for the respondents to use to provide any feedback on any topics that the survey did not cover, related to their knowledge practices. Sixty-eight of the respondents answered this final survey question. A coding scheme was developed in order to analyze the narratives. The code "Miscellaneous" was used to code those narratives that were not related to the topic of this research study, such as "better management." Table 21 shows the coding scheme used and the frequency counts for each code. Among the 68 write-in narratives, the most frequently-mentioned theme was the need for better technology systems, tools and training (28%). The runner-up at 15% was having more knowledge sharing across departments. These results reflect a desire among university press staff for better technology implementation and more cross-departmental sharing of knowledge.

Table 21: (Q26) From a knowledge sharing point of view, what changes would you like to see in your company? Write-In Answers

Code	Response Type	# Count	%
1	Better technology system, tools, training	19	28%
2	More structured mechanism on documentation or meetings	3	4%
3	More knowledge sharing across departments	10	15%
4	We are satisfied with the current situation	4	6%
5	Project meetings across the presses that affect the organizations on a micro-level	1	1%
6	Structured mentoring with open-minded management; upper management respect the knowledge from operational employees; Management buy-in and enthusiasm for knowledge sharing.	4	6%
7	A central hub that can be accessed by staff to avoid duplicated effort in documentation and keeping them in silos.	5	7%
8	Better communication channels between departments	4	6%
9	Better documentation for keeping leaving employees' knowledge inside the organization to facilitate new employees' training	5	7%
10	Too busy, want more time to share	2	3%
11	More trust between staff, better institutional knowledge sharing practices and recording, more incentives for knowledge-sharing and apprenticeship	2	3%
12	Miscellaneous (not directly related to knowledge sharing issues)	9	13%
Total (N)		68	100%

Qualitative Research Results

About the Interviews

An invitation to participate in the in-depth interview portion of the study was sent out via the AUP's Director listserv, after the study's approval by the Institutional Review Board was obtained. This listserv reached a subscriber list of 147 AUP member presses' directors. After the AUP sent out the invitation via the Director listserv, six directors from the United States replied individually to the researcher, volunteering to participate in the first round of interviews. After those six interviews were conducted, transcribed and analyzed, patterns emerged indicating a saturation point had been reached. The researcher decided to conduct a second round of two more interviews, to confirm her findings before ending the qualitative data collection process. The researcher individually contacted five directors in different countries to see if they were interested in volunteering for an interview. Only two directors, both from the United States, agreed to participate in a second-round interview. In total, all qualitative research participants (five males and three females) were from the United States. Two participants were interviewed via the Zoom online meeting platform. Four participants were interviewed via phone and two others were interviewed on-site face to face. The rate of response for this portion of the study was 5.4%, with an N of 147, which is the number of directors subscribed to the AUP's Director listserv.

Interviewees' Privacy and Identity Protection

Each interviewee signed an informed consent form that stated the purpose and the details of participating in this study, prior to sitting for the interview. By signing the document, they agreed to participate and acknowledged that parts of the study and fragments of their interviews could be used in any research documents resulting from this study. Each of the interviewees was offered the chance to receive his/her interview transcript to review. Interviewees were addressed only by

the first letter of their names, such as Mr. S. or Ms. S., in the interview recordings. Each interview recording and the corresponding transcript was identified with a sequential number, such as DISS Interview_1, as the key to organize the recordings and transcriptions in an orderly and confidential manner. The interviews were transcribed by a paid transcriber who signed a non-disclosure agreement. The researcher was the only person to have exclusive access to the consent forms, recordings and all digital and paper copies of the interviews.

Any names or organization names mentioned by the interviewees were redacted from the transcripts before they were analyzed. All recordings related to this research were destroyed as soon as the transcription of each recording was completed, as per the Institutional Review Board's rules.

Coding and Analysis using QDA Miner

In social sciences research studies, the application of computer-assisted qualitative data analysis (CAQDAS) is popular (Atherton & Elsmore, 2007; Mangabeira, Lee, & Fielding, 2004). Qualitative data analysis software (QDAS) helps researchers with the labor-intensive process of qualitative data analysis (Silver & Lewins, 2014). For this study, the qualitative data analysis software, QDA Miner 5.0, provided by the University of Tennessee, was used for coding the textual data. Like other qualitative software for content analysis, it offers the ability to code, to retrieve text, and to conduct frequency and statistical analyses of text content, using its advanced features.

QDA Miner was designed with options that specifically address mixed methods analytics support (Silver & Lewins, 2014, p. 72). This application allows the creation of coding categories for use in devising and retrieving text-based coding structures when working with a small sample size. For this project, all of the interview sessions were audio-recorded using a digital recording

phone app and were then transcribed by the paid transcriber. The researcher listened to the recordings and read the transcriptions several times to gain more insight, and a better understanding of what the interviewees were trying to convey, both in broader terms and within the context of the study. This technique allowed the transcripts to be thoroughly evaluated to ensure that the information they contained was interpreted accurately (Patton, 2002). The transcriptions were then uploaded to the platform of the QDA Miner software for the data analysis process.

Content analysis was done through the use of the QDA Miner program. The qualitative aspect of this study, involving eight interviews, was manageable enough to permit a thematic analysis. To mark the coded segments, this program also provided an entire spectrum of colors to use for coding data and for adding reflective memos. The coding process of "putting tags, names or labels against pieces of data" (Huberman & Miles, 2002) organized the related segments of the data into categories. The researcher used colors that were distinct enough to reveal as explicitly as possible when different categories occurred in the same segment.
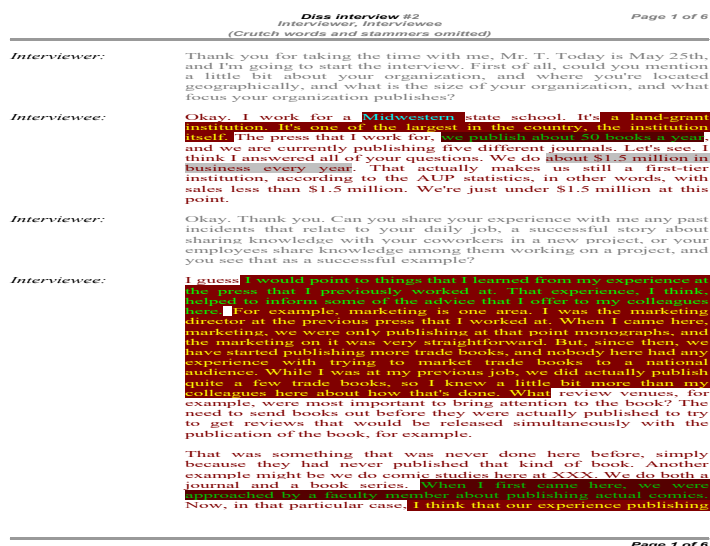
Figure 5 - An Example of a Color-Coded Segment

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By reading the transcripts, the researcher identified words and phrases that related to relational/interpersonal factors, and also those that indicated content or technical factors. By comparing the interview transcripts, relationships or patterns of similarities were grouped together. Those identified groups were then organized into the overall outline of categories, in accordance with the best possible formulation to be chosen, while any redundant themes were eliminated (McCracken, 1988).

In this manner, the transcript data were reduced from a large amount into a well-organized and coherent outline that summarized the interviews. When labelling the categories, the exact words from the transcripts were used whenever it was possible. The researcher only used her own words when it was necessary to name and order categories in grouping similar ideas.

Developing a Theme Codebook

The data analysis process involved creating a coding classification, as "developing some manageable classification or coding scheme" is essential to analysis (Patton, 2002, p. 463). The codes are "words or phrases that represent themes" (Zikmund, Babin, Carr & Griffin, 2008, p. 468). Two coding strategies (open coding and axial coding) were used in this study to interpret data and relate concepts to each other (Corbin & Strauss, 2008). The process involved taking the data apart, rearranging and putting it back together in a manner that represented the concepts and categories as they related to each other in meaningful ways (Corbin & Strauss, 2008). The objective of the analysis was to build a structural synthesis of core elements that inform the respondent's view in general and the study's topic in particular (McCracken, 1988).

The data analysis began the open coding with a brainstorming approach to analyze all of the potential code names. Reading line by line from the interview transcripts, the researcher created the preliminary codes by treating each utterance as an entity of its own (McCracken, 1988) and

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extracting concepts after considering their possible meanings and examining the context carefully (Corbin & Strauss, 2008). Then the researcher assigned codes to the concepts and grouped the codes into categories. She then arranged these categories into a cohesive research narrative. Some of the codes were assigned by the researcher during the raw data analysis, while some others were provided by the participants as "emic terms" (Patton, 1990) or "in-vivo" code (Corbin & Strauss, 2008), as mentioned in scholarly literature.

After completing the open coding stage from reading the interview transcripts, the researcher observed an emerging pattern related to the knowledge management practices shared by the participants. The axial coding phase was then conducted to identify potential themes to be used to highlight segments from the text. The concepts were identified in the data and assigned codes that were further grouped into categories or themes according to shared properties (Corbin & Strauss, 2008). Then Dey's (1993) "splitting and splicing" technique was used to group data into categories consistent with the revealed patterns. As per Dey's technique, splitting is to refine categories by subcategorizing data and splicing is done to combine categories to form an integrated conceptualization. Therefore, the categories in this research project were expanded into levels by dividing them into various smaller categories or by combining them into broader categories, as the coding process went on to reveal emerging themes from the data. An example of the process is shown in the following diagram.

Figure 6 - The Development of Theme Code Levels

The findings of this research were presented with verbatim quotes from the participants, arising from the interview transcripts, with the researcher's interpretation. This was to balance the two objectives of reflecting the participant's voice, while achieving an appropriate level of description and analysis (Patton, 1990). This is important because the goal of qualitative research, rather than producing findings that are generalizable to a large population, is to understand a phenomenon within its context and to provide a description of the findings for informing anyone's future attempt to make similar judgements (Lincoln & Guba, 1985).

Interview data were analyzed on the basis of a systematic coding (breaking down) of data according to a code list (or code system) to identify relevant patterns (Saldaña, 2012). The coded segments were then grouped and synthesized into (more general) categories, which in turn linked to more general themes. The code system (the categories and themes) was developed gradually and collaboratively on the basis of the coding process to summarize and describe the data in a useful manner (Flanagan, 1954).

There are two main types of codes: (1) descriptive codes and (2) inferential (or pattern, or thematic) codes (Miles & Huberman, 1994). Early labels may be descriptive codes requiring little

or no inference beyond the piece of data itself. These descriptive codes are valuable in getting the analysis started and in enabling the researcher to get a "feel" for the data. First level coding mainly uses descriptive, low inference codes which are very useful in summarizing segments of data and which provide a basis for later higher-order coding (Huberman & Miles, 2002).

In this research, the descriptive coding covers the first section of the interview template in which interviewees were presented wth such prompts as: Tell me about your organization. What is your job? What is your publishing focus? For example, the following shows an excerpt from the coding of the transcripts.

CASE DISS interview_1   My organization is considered a mid-size university press

The later-level coding focused on pattern coding. A pattern code is more inferential and a sort of "meta-code" (Huberman & Miles, 2002). Pattern codes pull together material into smaller, more meaningful units. There is usually a range of possibilities when it comes to applying codes to the data or finding them within the data. The patterns "collegiality" and "do anything for me if I asked" were drawn from the response data. For example, the following shows the excerpts from the coding of the transcripts. The excerpts show how differently interviewees responded to the same question.

CASE DISS interview_2   We are a very, I think, egalitarian and collegial organization

CASE DISS interview_7   I know that anybody here would do anything for me if I asked them to, and I think that they feel that way about one another, too. There is not a single position where somebody is really off by themselves.

This approach allows for the deduction of common themes and patterns from the data. The final coding scheme (see Appendix H) was created and used as a template to interpret across the eight interview transcripts.

Results

Interviewees' Profiles

Table 22: *A Summary of Interviewees' Profiles in the Qualitative Research*

Interview	Gender	Interviewed via	Country	Org. Size	Located in *	Main Publishing Focus
#1	F	Online Zoom	USA	Small	East South Central	Military history, film studies, Appalachian studies, African-American studies
#2	M	Online Zoom	USA	Small	East North Central	Humanities and literary studies, comic studies, Victorian studies, medieval studies, gender and sexuality studies, regional and linguistics
#3	F	Face to Face	USA	Large	South Atlantic	Humanities, life sciences, health policy, public health and regional titles
#4	M	Phone	USA	Small	Mid Atlantic	Humanities, social sciences with emphasis on the fields of African-American studies, American studies, communication and media studies, religion and urban studies
#5	M	Phone	USA	Large	Mid Atlantic	Humanities, social sciences, art criticism and history, visual studies, gender studies, gay and lesbian studies and American studies
#6	F	Phone	USA	Small	East North Central	Biographies for Young Readers, Cambridge Center of African Studies Series, The Civil War in the Great Interior, Series in Appalachian Studies
#7	M	Face to Face	USA	Small	East South Central	American studies, Appalachian studies, African-American studies, folklore, historical archaeology and literature
#8	M	Phone	USA	Medium	East North Central	Political science, performing arts, classics, American studies and Great Lakes region studies

\# Organization Size Classification: Large (= > 50 staff), Medium (25 - 49 staff) & Small (< 25 staff)

* Based on the Census Bureau-designated regions and divisions.

Consistent Themes Observed

Several patterns were observed across the interview transcripts. They are illustrated as follows, with an excerpt of a code segment for each one:

Theme 1 – Unified Social Norm within the Presses

The social norm across the university presses is that of a close-knit society. Each press operates in a similar way in their publishing procedures. The only competition among them is to recruit notable authors. Most presses host internships or similar programs. As it was portrayed in the transcripts, the presses expect that the newly-hired employees should already have had a certain degree of experience and knowledge working in the field, either through an internship program or from previous employment. For example:

DISS Interview_2   I think, in the university press world, where you don't hire somebody who doesn't have some experience in scholarly communications.

Theme 2 – Collegiality and Open Culture Across the Presses

A high level of collegial spirit at each press was found across the eight interviews. The interviewees indicated they perceived that their employees trust each other. The directors giving these interviews reflected that their staff are eager to share within their press internally or via interactions with other member presses. These presses were empowered by management to share internally and collaborate with other departments within the host university. In fact, three out of the eight interviewees mentioned the actual word "collegial" in their interviews. For example:

DISS Interview_1   One interesting thing about university presses, we're very collegial, and so a lot of times we'll ask each other for advice

DISS Interview_2   We are a very, I think, egalitarian and collegial organization

DISS Interview_5   I would say the university press community, in general, is amazingly collegial.

Theme 3 – Meetings and Conferences are the Main Way to Share Tacit Knowledge in the Presses

Using the keyword retrieval feature in QDA Miner software on the eight interview transcripts, the word "meetings" was counted thirty-four times and the word "conferences" appeared six times. These high counts provided evidence that attending meetings and conferences was a popular way for university presses to share tacit knowledge.

Figure 7 - An Example of Content Analysis Count #1

Figure 8 - An Example of Content Analysis Count #2

There was also evidence in the transcripts that indicated that university presses preferred the personal touch, such as drop-in meetings. For example:

DISS Interview_5   People also get introduced to various parts of the press through something we call Meet the Press, which is every month, pretty much. One group does a presentation, and then all the new employees within the last year, and any longer-term employee who wants to can come and hear about what's going on in that part of the press.

It is interesting that a female director considered that proximity was a barrier to sharing knowledge because her staff were located in two different buildings, while a male director indicated that placing staff in an open-office layout was a positive measure to facilitate knowledge sharing. Although they saw "office proximity" in opposite ways, the underline thoughts were the same.

Theme 4 – The Association of University Presses is important for member presses to seek and share operational knowledge.

The two listservs of the Association of University Presses and the AUP's annual conference in San Francisco were considered to be the main venue for the presses to exchange information and create knowledge. For example:

DISS Interview_1   A very active e-mail listserv with our professional association

DISS Interview_3   We're looking outside to the Association of University Presses, where we're determining what our peers are doing.

DISS Interview_4   We rely on our society, our association to kind of give us the tools and background to help us train new employees.

DISS Interview_7   I'm a strong advocate of the AUP, which is the Association of University Presses. It's an umbrella group … provides advice about legal matters and about day-to-day operations, and keeps us updated on legislation that might be coming, or even things as minor as announcing new projects, and things like that.

Theme 5 – Knowledge Management Theory and Concepts are Unfamiliar Among Presses

It caught the attention of the researcher during the course of the interviews that the interviewees were unfamiliar with knowledge management concepts. Several directors asked about the meaning of "knowledge management" during the interviews. Some directors did not ask about the meaning of knowledge management, but instead answered the questions from marketing strategies or human management perspectives. A minor experiment was done in the last two interviews to check if there would be a difference in answers. The researcher provided the interviewees with the definitions of explicit knowledge and implicit knowledge prior to the recordings of these two interviews. However, there was no difference in the outcomes, compared to the previous six interviews. Interview #7 answered the questions from the context of their book publishing activities and Interview #8 answered the questions from an office communication perspective. For example:

DISS Interview_3	It's something that I need to learn more about. I've certainly heard about this and read about this discipline and what you're studying, but I think that there is probably a lot more that we need to know as an organization moving forward. It could end up being part of this culture assessment, the culture visioning, the culture strategic planning that we might move forward with.
DISS Interview_5	Tell me what you mean by sharing knowledge. Do you mean within the organization, between our organization and other organizations?
DISS Interview_6	When you are speaking about shared knowledge, Judi, are you sort of speaking about the issue of sort of internal communications and systems?
DISS Interview_7	We use SharePoint for our editorial board. When we gather reports, we share documents that way, and things like minutes for the meeting and all that kind of stuff
DISS Interview_8	We also have written documentation about various processes … Our internal processes are captured in documents... and those are Google documents

Theme 6 – Knowledge Curation is Mainly Documented in Conventional Ways, Such as Being

Stored in Internal Databases and Online Cloud Storage Media

There is no sophisticated knowledge management system mentioned in any of the eight

interviews. For example:

DISS Interview_1	We have a press-wide database that the press has been using for a number of years.
DISS Interview_2	Have a shared server
DISS Interview_7	We use a weekly wiki for staff meetings to post agendas and have people add to it
DISS Interview_7	We use SharePoint for our editorial board. When we gather reports, we share documents that way, and things like minutes for the meeting and all that kind of stuff
DISS Interview_8	We also have written documentation about various processes, and a version of the guidelines that we share with our authors, which is a little bit more detailed for internal staff. Our internal processes are captured in documents that we call standard operating procedures, SOPs, and those are Google documents that are always called SOP in their title so they're easy to find.

Table 23: *Emerging Themes by Each Interview*

Interview	The Classified Organization Size in This Research	Theme #1	Theme #2	Theme #3	Theme #4	Theme #5	Theme #6	Remarks
# 1	Small	√	√	√	√	√	√	
# 2	Small	√	√	√	√	√	√	
# 3	Large	√	√	√	√	√	√	
# 4	Small	√	√	√	√	√	√	
# 5	Large	√	√	√	√	√	√	
# 6	Small	√	√	√	√	√	√	
< --	Saturation Points Emerged						-->	
# 7	Small	√	√	√	√	√	√	Mini-experiment applied
# 8	Medium	√	√	√	√	√	√	Mini-experiment applied

Legend

Organization Size Classification by Number of Employees: Small size (< 25 staff), Medium size (25 to 49 staff), Large size (=> 50 staff)

Theme Description:

 Theme #1 Trust is the social norm in this close-knit society
 Theme #2 Full of collegiality in their organization culture
 Theme #3 In-person communication is important
 Theme #4 The Association of University Presses is important for member presses
 Theme#5 Knowledge management theory and concepts are unfamiliar to presses
 Theme#6 No sophisticated knowledge management system was mentioned

Identified Outliers

As reflected in the interview transcripts, these eight university presses demonstrated a similarity in their practices in knowledge sharing and retention. Amid the qualitative data analyses, three incidents from three of the interviews were identified as exceptions to Theme 1 (a unified social norm). These university presses performed slightly differently, in such a way that the researcher considered them to be outliers. These university presses' activities were:

DISS Interview_1   In order to look at this reorganization, we brought in a trainer from our own university who was offered to us… she is kind of guiding us through what are the steps of our current procedures, and then we put all of those down and who is responsible for what and in what order.

DISS Interview_2   We were approached by a faculty member about publishing actual comics. … We were already used to using comics in our scholarship … I'm a comic lover myself … so I think that might be an example where my personal experience was useful in … the production department deal with particular challenges that are specific to publishing comics.

DISS Interview_3   We also just finished a major organizational culture assessment, and so that was done with quantitative and qualitative work.

All eight interviewees, as a whole, described the same kind of operational activities in scholarly publishing among the university presses. There was obviously a unified social norm pattern that emerged across the university presses, except for the three interviewees who mentioned the three incidents that made them veer slightly away from the social norm. The university press of Interview_1 brought in a trainer from their own university to offer guidance on their current procedures. The university press of Interview_2 accepted their faculty member's idea of publishing outside of the press's comfort zone (comics) and the university press of Interview_3 conducted a major organizational culture assessment. These incidents represented the initiative of university presses in knowledge sharing with outsiders to innovate their usual processes.

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Research Question 1: Factors Influencing Individuals' Knowledge-seeking and

Knowledge-sharing in University Presses

This research tried to understand knowledge practices among university presses, with specific foci on behavioral, cultural, social and technological issues. Research in the scholarly literature indicated that having a sharing culture and the presence of trust are two key factors influencing knowledge seeking and sharing behavior. The findings from this research provide evidence from the qualitative data supporting this school of thought.

While conducting a content analysis on the transcripts, the word "meeting" was counted thirty-four times and the word "conference" was counted six times, across the eight interview transcripts. The following coded segments support the importance of attending meetings and conferences in their knowledge-sharing processes.

DISS_Interview #4	We go to the key academic conferences throughout the year
DISS_Interview #5	We also have brown-bag lunches on a fairly regular basis at which people present things they know and want other people to know, or give people a chance to know

In fact, university presses are also collegial in their culture. Several directors noted in their interviews that this is characteristic of their organizational culture. For example, they said:

DISS_Interview #1	One interesting thing about university presses, we're very collegial, and so a lot of times we'll ask each other for advice
DISS_Interview #2	We are a very, I think, egalitarian and collegial organization
DISS_Interview #5	I would say the university press community, in general, is amazingly collegial
DISS_Interview #7	I know that anybody here would do anything for me if I asked them to, and I think that they feel that way about one another, too. There is not a single position where somebody is really off by themselves.

Collegial organizational culture works hand in hand with a trustful social norm. With a collegial organizational culture, people are eager to share knowledge. With a trustful social norm, people trust their coworkers and their coworkers' knowledge. Therefore, "collegiality" and "trust in the relationship" as independent variables correlated with the degree of "knowledge sharing" observed as a dependent variable.

For explicit knowledge, university presses tend to use similar literature sources in their specific professional areas, such as Publishers Weekly and Scholarly Kitchen. The Association of University Presses (AUP) email listserv served as the major knowledge-sharing platform in a group setting for individuals to interact and mingle with their fellows in the field, to get news and updates about their profession. The important role of AUP as an information source in the university presses' working life is reflected in the following interview transcripts from the qualitative research.

DISS Interview_3	We're looking outside to the Association of University Presses, where we're determining what our peers are doing.
DISS Interview_4	We rely on our society, our association to kind of give us the tools and background to help us train new employees.
DISS Interview_7	I'm a strong advocate of the AUP, which is the Association of University Presses. It's an umbrella group … provides advice about legal matters and about day-to-day operations, and keeps us updated on legislation that might be coming, or even things as minor as announcing new projects, and things like that.

Research Question 2: Ways that University Presses Apply and Retain their Operational Knowledge in their Organizations

Capturing knowledge in organizations for future use is important in any organization's strategic plans. One of the research questions that guided this project sought to find out if the presses have any knowledge-retention strategies in place. The findings support the scholarly

literature's assertion that organizations consider knowledge to be crucial for long-term organizational success, but they do not formulate any knowledge-retention strategies (Liebowitz, 2008).

The findings from this study's qualitative research portion reflected that the concepts of knowledge management were unpopular across university presses.   There were no formal structures or any sophisticated knowledge-retention platforms to organize or classify operational knowledge mentioned in qualitative data.

To apply and retain operational knowledge, university press members rely mainly on operational manual paper documents, listserv communications, email, their organization's shared server, employees' personal computer drives or cloud computing collaboration tools such as wikis, SharePoint and Google Suite.

DISS Interview_2	Have a shared server
DISS Interview_7	We use a weekly wiki for staff meetings to post agendas and have people add to it
DISS Interview_7	We use SharePoint for our editorial board. When we gather reports, we share documents that way, and things like minutes for the meeting and all that kind of stuff
DISS Interview_8	We also have written documentation about various processes … Our internal processes are captured in documents... and those are Google documents

Research Question 3: Types of Knowledge Barriers that University Presses Encountered

Several types of knowledge barriers identified by other scholars are listed in the literature review of this dissertation, such as technological barriers (McLaughlin, Paton & Macbeth, 2008). Other examples are having a weak culture of sharing, such as occurs in some Asian organizations that only share among family members and close colleagues (Yao, Kam, & Chan, 2007), or

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employees who "keep secret information to avoid losing their job" (Hermann, 2011). The literature also identified personal barriers such as those having no motivation to share, or those who hoard information to make themselves more competitive and to have an advantage over others (Hermann, 2011).

For this research on university presses, no evidence emerged in the findings of any of the above-mentioned obstacles (except for the technological barriers) that hinder knowledge sharing between team members on an intra-project level. However, the presence of the weak sharing culture barrier cannot be determined, because these interviewees were from a fairly-open, western-centric culture. There is no way to draw conclusions about these organizations' sharing culture by ethnicity from this research.

For the interviews with directors, issues with proximity were considered to be an obstacle, as two directors mentioned about their office layout. One director indicated that not having her staff on the same floor hindered knowledge sharing and another director credited his organization's office layout where his staff were nearby as facilitating knowledge sharing. Regardless of seeing it through a positive or negative lens, office proximity was considered to be a type of barrier.

| DISS Interview_3 | Our marketing department is split between floors here, and so I've been told that that's one of the reasons why the marketing department is not collaborating and sharing knowledge as they should be. |
| DISS Interview_8 | They communicate in several different ways. One of them is walking around and talking to people, because we're all in the same building, and it's easy to go and talk to someone. |

Coded Segments in Emerging Themes by Organization Size

1) Unified Trust Social Norm

Emerging Themes by Organization Size

(Unified in Trust Social Norm)

Organization Size	University Press	Coded Segment Examples
Large Organization Size (50 staff or more than 50 staff)	DISS interview_3	the visioning for the culture that we want to do a better job of encouraging people to mix together, and building some kind of structure so that people have more of an opportunity to mix.
	DISS interview_5	I think there is a general sense that information needs to be shared across the press
Medium Organization Size (25 staff or less than 49 staff)	DISS interview_8	there are a variety of different systems and ways in which people are sort of introduced to their jobs. We have actually recently also introduced a mentoring system, and that's new for us. That's providing a mentor who is in a completely different department just to be a kind of informal guide to our culture, for example. We're also thinking about that person's role in the context of supporting diversity. For example, helping that person to navigate our organizational culture
Small Organization Size:(less than 25 staff)	DISS interview_1	have a vigorous internship program that we run both in partnership with our campus where we're located, but also we're a consortium press.
	DISS interview_1	I rely on a network of colleagues
	DISS interview_1	anywhere between three and seven or eight interns per semester
	DISS interview_2	A lot of university presses have strong internship programs.
	DISS interview_2	I think, in the university press world where you hire somebody who doesn't have some experience in scholarly communications
	DISS interview_2	We are really not prepared to bring on somebody who is completely new to the scholarly communication world.
	DISS interview_2	I think that the internship pipeline is definitely something that if we are looking for a new person and they have that internship line on their CV, that is one of the most important things to us if they don't have any actual experience in university press publishing
	DISS interview_2	I think, in the university press world where you hire somebody who doesn't have some experience in scholarly communications
	DISS interview_2	they're motivated by a shared mission, something that we all are working towards. I think that is probably the most important thing for having an organization that is sharing information openly and is creating informed colleagues. Really, that culture, I think, is key to that, and, frankly, I think it's key to our success, not just the knowledge-sharing portion of it but achieving our mission of maximum dissemination of our content. I really do think the culture is the primary element to being able to do all of those things.
	DISS interview_4	our own skill sets and knowledge that we impart on our new employees, and we meet with them on a regular basis, they get immerged in university publishing by doing, and we will train them and show them what's necessary.

2) Collegiality and Open Culture

Emerging Themes by Organization Size

(Collegiality and Open Culture)

Organization Size	University Press	Coded Segment Examples
Large Organization Size (50 staff or more than 50 staff)	DISS interview_3	I have empowered them to decide what they and their staff and their peers believe is the best way to share this knowledge.
	DISS interview_3	when I first came in, I started a staff enrichment team. In the past, the collaborative work that's been done was coordinated mostly by one person. It was my assistant. The staff enrichment team has people who come from all the different divisions, who come together to determine what kinds of activities are best for enriching our lives
	DISS interview_5	I would say the university press community, in general, is amazingly collegial.
Medium Organization Size (25 staff or less than 49 staff)	DISS interview _8	They can serve on committees in the library, there is an amity, a friendship committee that sort of greets new people more informally and offers opportunity for networking, et cetera
	DISS interview _8	we've moved responsibility for educating the editors to a single person, because previously it was becoming very confusing. It wasn't clear who to approach, so we've designated one person to be responsible for helping them to understand the systems, for receiving their feedback for refining the system. That's a situation where it's a problem that we've had around organizational communication, and it's an example of how we're addressing that problem,
Small Organization Size:(less than 25 staff)	DISS interview_1	One interesting thing about university presses, we're very collegial, and so a lot of times we'll ask each other for advice
	DISS interview_1	promotes trust between the department heads in that they know marketing is going to give them frank feedback, but also work with them and want to have a constructive conversation rather than when marketing first learns about a book when it's about to be transmitted and put in the catalog
	DISS interview_1	one of the other things that's a less technically-oriented kind of thing but I do think it's knowledge sharing and certainly impacts the overall success of the organization, is we're trying to think about making the meetings we have the most useful.
	DISS interview_2	they're motivated by a shared mission, something that we all are working towards. I think that is probably the most important thing for having an organization that is sharing information openly and is creating informed colleagues. Really, that culture, I think, is key to that, and, frankly, I think it's key to our success, not just the knowledge-sharing portion of it but achieving our mission of maximum dissemination of our content. I really do think the culture is the primary element to being able to do all of those things.
	DISS interview_2	culture is incredibly important, and creating the right culture at the press so that people aren't being motivated by fear
	DISS interview_2	I do encourage, particularly my department heads, to, as I said, be open to experiments, be open to failure.
	DISS interview_2	Each particular process being documented, you can certainly give them that document as a guide, but there is a lot of sort of hands-on training and discussion that happens with a new employee.
	DISS interview_2	We are a very, I think, egalitarian and collegial organization
	DISS interview_2	I encourage that, and I think it definitely benefits everybody. I do everything that I can to break the silos down between the individual departments so that there is always communication, and I think that it does work rather successfully here.
	DISS interview_2	I very much like to empower my colleagues to be able to make decisions themselves.
	DISS interview_4	Most people are eager to share their knowledge because it's something that should be shared
	DISS interview_4	Just having an open debate and a dialogue is important.
	DISS interview_4	open to other people's ideas, or for the other ideas
	DISS interview_4	openness and collaboration and creativity
	DISS interview_4	Everything we do has to be part of a collaboration
	DISS interview_6	As a director, you need to cultivate a culture of being able to speak out in a constructive fashion.
	DISS interview_6	I personally would say that a real do is to create an atmosphere and a culture where people feel perfectly comfortable about speaking out, and create a style of that kind of confirmation that is not confrontational, that is not blaming, that is just matter-of-fact.
	DISS interview_6	The director should be really proactive in using them and encouraging everybody, and making sure that all of the communications tools are respected and used.
	DISS interview_6	I would say from about eight years ago, we purposely and deliberately set towards making all of our information available to everyone no matter where they were, if they were remote or working at home or whatever
	DISS interview_6	We have an excellent work culture at this press. You couldn't hope for a more communicative and positive sort of attitude.
	DISS interview_7	I know that anybody here would do anything for me if I asked them to, and I think that they feel that way about one another, too. There is not a single position where somebody is really off by themselves.
	DISS interview_7	I kind of want there to be people offering solutions and collaborating with each other. Sometimes, I don't even need to be a part of that until we come to some kind of decision about it. Again, I think we try to emphasize fluidity and a certain flatness so that everybody has a chance to contribute to that exchange, particularly about knowledge itself.

3) Sharing Tacit Knowledge via Meetings and Conferences

Emerging Themes by Organization Size

(Sharing Tactic Knowledge via Meetings and Conferences)

Organization Size	University Press	Coded Segment Examples
Large Organization Size (50 staff or more than 50 staff)	DISS interview_3	Understanding what library needs are is incredibly important, and so we're going to all the library meetings, as well.
	DISS interview_3	The SSP meeting, for example, is one of those meetings that we go to that is mostly science or mostly humanities, but science publishers tend to be ahead of humanities publishers and we need to know what's going on. We connect with people who are working in the sciences, journals as well as books, to keep up to date.
	DISS interview_3	One of them is that we go to professional meetings. Those are very, very good, of course, for networking but it's also good for going to panels and learning.
	DISS interview_5	We also have brown-bag lunches on a fairly regular basis at which people present things they know and want other people to know, or give people a chance to know
	DISS interview_5	People also get introduced to various parts of the press through something we call Meet the Press, which is every month, pretty much. One group does a presentation, and then all the new employees within the last year, and any longer-term employee who wants to can come and hear about what's going on in that part of the press.
	DISS interview_5	There were lots of meetings, but most of it is in writing. It might be sent electronically. For me, I'm printing it out. For the younger people, they're probably just reading it on the screen
	DISS interview_5	so our last planning round, which happened throughout the year of 2015, we convened I think six groups, each led by one of our directors, to talk about areas in which we might develop plans for next steps. Almost everyone at the press participated in some way or other. We, on purpose, assigned as leaders of each group not the person who was most directly connected to that part of the press. Yeah, we put together a set of ideas for where we needed to move forward, and then those all came to me with reports from each of the directors who were leading the group.
	DISS interview_5	we have a very organized onboarding process so that they get acquainted with all the parts of the press, and all the systems of the press
	DISS interview_5	Every second Friday of the month, that morning is designated for what we call Not Doing Business As Usual, which can be anything. People can set up a program, they can set up a discussion.
Medium Organization Size (25 staff or less than 49 staff)	DISS interview_8	I go to conferences
	DISS interview_8	we've created a regular drop-in meeting, so just an informal meeting where any editor who wants to come and talk to the lead technologist on the project can just come and drop i
	DISS interview_8	it's essentially just to make sure that people who start have meetings across the organization to learn
	DISS interview_8	If it is a senior person, they will meet with other departments. It depends on the expectations of how regularly people will be working with other departments
	DISS interview_8	They communicate in several different ways. One of them is walking around and talking to people, because we're all in the same building, and it's easy to go and talk to someone.
	DISS interview_8	Society for Scholarly Publishing,
	DISS interview_8	the Coalition for Networked Information
	DISS interview_8	Charleston conference.
Small Organization Size:(less than 25 staff)	DISS interview_1	One of the meetings we've started doing happens every two weeks, and all the acquiring editors are present, and also our marketing director and our managing editor, and sometimes our fulfillment director, where we talk about potential book projects. Each of the acquiring editors will bring
	DISS interview_1	in-person knowledge sharing has been very valuable.
	DISS interview_2	just walk out of your office
	DISS interview_2	We've only got about 13 folks working full time here, and that means it's relatively simple to just walk out of your office and go find somebody and ask them. I
	DISS interview_2	Each department, we meet on a weekly basis
	DISS interview_2	I also meet on a weekly basis with the heads of those departments
	DISS interview_4	we go to the key academic conferences throughout the year
	DISS interview_4	meet with different departments at the press
	DISS interview_4	we'll set up meetings with scholars and discuss their works, and see if there is potential for them to want to publish that into a book.
	DISS interview_4	editorial projects meetings
	DISS interview_4	seasonal planning meetings where we determine what books are in the queue, what's coming down the line, what are the deadlines for the manuscript submissions
	DISS interview_4	these weekly meetings, these planning meetings
	DISS interview_4	I think it's stepping back and taking the time to do it, or setting up these meetings or opportunities to share the knowledge. Just recently, we were all operating in our own silos and evaluating proposals and manuscripts, and I thought, "Why not get the input and insight from other editorial people, the other team members to kind of help evaluate the proposals and manuscripts, so we set up these project meetings. We meet every two weeks, once every two weeks, and we discuss the projects, you know, "This is what has come across my desk. Is this something that we want to pursue?" You're getting the insight and knowledge and expertise of other people. I think that's been really, really helpful, so creating these opportunities where you're getting the input from your colleagues is really, really important, and that's something we instituted recently.
	DISS interview_6	the director, make time to speak with remote people really daily, if possible
	DISS interview_6	What I did to fill that sort of need was that every week at our staff meetings, we have a quick go-around where everybody doesn't speak about what they accomplished but they speak about what they have to accomplish in the week ahead.
	DISS interview_6	marketing meetings once a week, and so on
	DISS interview_6	Most people are heads of, you know, a lot of single-person departments, and so we moved to these staff meetings because group department head meetings left out maybe three or four people. That really didn't create a good atmosphere of teamwork and camaraderie. It felt sort of exclusive in a way that was sort of unnecessary.
	DISS interview_6	We have weekly staff meetings.
	DISS interview_6	The office is structured in such a way that makes for good communication
	DISS interview_6	We communicate by going to each other's offices
	DISS interview_6	We don't have a structure where there are lots of heads of departments.
	DISS interview_7	With the people that have worked here, all but one of them has been here for five years or longer, and so they're experienced, and they can be trusted to do their jobs, and they can also be trusted to bring up concerns and things that are happening that need to be fixed and worked on
	DISS interview_7	I mentioned, some of those duties are pretty fluid, and I think we do communicate exceptionally well because our organization is fairly flat
	DISS interview_7	so our organization is fairly flat versus being hierarchical,
	DISS interview_7	probably half a dozen planning meetings before they even got started on the writing of this.
	DISS interview_7	they had several meetings early on just to try to talk about
	DISS interview_7	We have weekly staff meetings,
	DISS interview_7	meet three times a year
	DISS interview_7	After the planning stages, there was lots of interaction between the editors and us to keep the project moving along, and so, yeah, it was a pretty …
	DISS interview_7	there is a pretty brisk conversation going on about all matter of things

4) The Association of University Presses is the Main Knowledge-sharing Platform

Emerging Themes by Organization Size

(The Association of University Press is the main knowledge sharing platform)

Organization Size	University Press	Coded Segment Examples
Large Organization Size (50 staff or more than 50 staff)	DISS interview_3	we're looking outside to the Association of University Presses, where we're determining what our peers are doing.
	DISS interview_3	In fact, when we're going to the AAUP meeting next week, I asked everybody who went to understand that when they come back, they're going to need to share this knowledge.
	DISS interview_5	We just had our annual meeting, and anyone who comes into the community is amazed at how open people are with information. I think that's something we're proud of
Medium Organization Size (25 staff or less than 49 staff)	DISS interview _8	AU Presses annual meeting
Small Organization Size:(less than 25 staff)	DISS interview_1	a very active e-mail listserv with our professional association
	DISS interview_4	We rely on our society, our association to kind of give us the tools and background to help us train new employees.
	DISS interview_7	I'm a strong advocate of the AUP, which is the Association of University Presses. It's an umbrella group that nearly all American university presses belong to. That group represents us to a larger public, and also provides advice about legal matters and about day-to-day operations, and keeps us updated on legislation that might be coming, or even things as minor as announcing new projects, and things like
	DISS interview_7	a variety of listservs that the organization can belong to, including one for directors that is more about what directors are up to and what we're thinking about sometimes strategically.
	DISS interview_1	a very active e-mail listserv with our professional association
	DISS interview_4	We rely on our society, our association to kind of give us the tools and background to help us train new employees.
	DISS interview_7	I'm a strong advocate of the AUP, which is the Association of University Presses. It's an umbrella group that nearly all American university presses belong to. That group represents us to a larger public, and also provides advice about legal matters and about day-to-day operations, and keeps us updated on legislation that might be coming, or even things as minor as announcing new projects, and things like
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	DISS interview_7	a variety of listservs that the organization can belong to, including one for directors that is more about what directors are up to and what we're thinking about sometimes strategically.

5) No Knowledge Management System in Place for Knowledge Retention

Emerging Themes by Organization Size
(No Knowledge Management System in place to archive data)

Organization Size	University Press	Coded Segment Examples
Large Organization Size (50 staff or more than 50 staff)	DISS interview_3	I think now that I'm talking to you and thinking about the discipline of knowledge sharing, making sure that knowledge is documented, I think we need to do a better job of it, okay?
	DISS interview_3	It's something that I need to learn more about. I've certainly heard about this and read about this discipline and what you're studying, but I think that there is probably a lot more that we need to know as an organization moving forward. It could end up being part of this culture assessment, the culture visioning, the culture strategic planning that we might move forward with. Anyway, so I really appreciate you being here and bringing this to top of mind. I think we can improve.
	DISS interview_5	I haven't talked about knowledge sharing with other organizations
	DISS interview_5	Tell me what you mean by sharing knowledge. Do you mean within the organization, between our organization and other organizations?
Medium Organization Size (25 staff or less than 49 staff)	DISS interview _8	We use a performance management system where people set goals at the start of the year, in July, the financial year. They set goals at the start of the year, they sign those goals with their supervisor, and then they get evaluated at the midyear and also at the end of the year. People who have shown evidence of reaching beyond their own department get a higher grade at the end of the year, and that is tied to some financial reward, as well.
Small Organization Size:(less than 25 staff)	DISS interview_1	we're a very specific kind of operation, there aren't necessarily other people at the university who understand exactly what it is that we do, so that sort of institutional memory and training is very important, because it's a specialized business.
	DISS interview_1	once you've involved marketing in that discussion, they may see needs very differently for that book, so bringing them in very early, and sometimes literally when the book is just an idea or a five-page proposal, rather than a finished book that's just sort of being handed to marketing to be worked on. I think that kind of early knowledge sharing promotes institutional buy-in, everyone understands even before the book is transmitted sort of what it is, who it's for, how we're going to handle it in house.
	DISS interview_2	We also don't, I think, have as good a record of different versions of things, so if, for example, a procedure should change, we don't necessarily know when that happened or who actually changed the documents. We do lose a little bit of information by doing it that way, but I guess, ultimately, I decided that it was more important that we had everybody buy into the concept of having a centralized place for the information, rather than which specific tool we were using for that centralized information.
	DISS interview_4	I think what a university press does, and what their mission is, is to share knowledge and to make voices heard. I mean that's the goal of a university press.
	DISS interview_6	I will say the one thing I wasn't sure about, referring to my question in the beginning, "Did this relate to knowledge sharing within the company?" I wasn't sure if it also referred to some of these big notions of open access and the ways in which scholarly publishing functions in the world right now.
	DISS interview_6	When you are speaking about shared knowledge, Judi, are you sort of speaking about the issue of sort of internal communications and systems?
	DISS interview_1	we're a very specific kind of operation, there aren't necessarily other people at the university who understand exactly what it is that we do, so that sort of institutional memory and training is very important, because it's a specialized business.
	DISS interview_1	once you've involved marketing in that discussion, they may see needs very differently for that book, so bringing them in very early, and sometimes literally when the book is just an idea or a five-page proposal, rather than a finished book that's just sort of being handed to marketing to be worked on. I think that kind of early knowledge sharing promotes institutional buy-in, everyone understands even before the book is transmitted sort of what it is, who it's for, how we're going to handle it in house.
	DISS interview_2	We also don't, I think, have as good a record of different versions of things, so if, for example, a procedure should change, we don't necessarily know when that happened or who actually changed the documents. We do lose a little bit of information by doing it that way, but I guess, ultimately, I decided that it was more important that we had everybody buy into the concept of having a centralized place for the information, rather than which specific tool we were using for that centralized information.
	DISS interview_4	I think what a university press does, and what their mission is, is to share knowledge and to make voices heard. I mean that's the goal of a university press.
	DISS interview_6	I will say the one thing I wasn't sure about, referring to my question in the beginning, "Did this relate to knowledge sharing within the company?" I wasn't sure if it also referred to some of these big notions of open access and the ways in which scholarly publishing functions in the world right now.
	DISS interview_6	When you are speaking about shared knowledge, Judi, are you sort of speaking about the issue of sort of internal communications and systems?

6) Knowledge Curation is Limited

Emerging Themes by Organization Size

(Knowledge Curation is limited to paper documentation, internal databases and online sotrage platform)

Organization Size	University Press	Coded Segment Examples
Large Organization Size (50 staff or more than 50 staff)	DISS interview_3	what the staff enrichment team has decided is that each person will write a pithy paragraph about what they've learned, and that will be the next newsletter so that people can learn about that.
	DISS interview_3	doing a newsletter
	DISS interview_3	process manuals
	DISS interview_5	There are a lot of other things to do. It's not a matter of not knowing how to do it, or at least that's the message I am being given: "We can do it but it will distract from many other things, and how high a priority is this?"
Medium Organization Size (25 staff or less than 49 staff)	DISS interview _8	various systems of documentation
	DISS interview _8	We also have written documentation about various processes, and a version of the guidelines that we share with our authors, which is a little bit more detailed for internal staff. Our internal processes are captured in documents that we call standard operating procedures, SOPs, and those are Google documents that are always called SOP in their title so they're easy to find. They document quite a lot of information about particular processes, and then we also have an integrated title management system. This is technology that connects staff in their workflow in producing a book, so they have logins and they have different roles, and it's where we gather the information about the book that's then transmitted out to book retailers, to jobbers, to people who need to know about the book
	DISS interview _8	we have an intranet within the publishing division, and we also have an intranet within the library.
	DISS interview _8	There is a newsletter every Friday that goes out about new initiatives
	DISS interview _8	There are also project management software that we use, so Asana, for example, and Slack. This is more used in the sort of more technology-heavy production side of the building. We use Trello. For different projects, we're actually using different project management software, and they communicate in that way.
Small Organization Size:(less than 25 staff)	DISS interview_1	One of the things that we are trying to do a better job of, again, is getting information and notes into the central database system
	DISS interview_1	the technology we already have in terms of really having all activities centered around the title management database.
	DISS interview_1	we have a press-wide database that the press has been using for a number of years.
	DISS interview_1	I subscribe to a number of daily e-mail newsletters having to do both with the book industry and with higher education, so those are probably the primary sources.
	DISS interview_1	I'll wait for the digest versions of, "What are the articles I really should be reading?" and then keep up that way. In house, we get Publishers Weekly, The Chronicle of Higher Education
	DISS interview_1	I would also do for other retiring employees is having them document timelines, write notes about essential components of the job.
	DISS interview_2	also have a shared server
	DISS interview_2	Each of the departments created a folder on that shared server where they would keep that sort of institutional information that they've been gathering and that was relevant to their particular department. Everybody has access to all of those documents, so it's still being shared, it's just not as centralized.
	DISS interview_2	on the Wiki,
	DISS interview_4	There is documentation that we share with them
	DISS interview_4	through e-mail
	DISS interview_6	But this sharing of communication, these sort of divergent communication styles have been, I would say, the cause of when there is sort of antipathy and frustration. It is because of the sort of older-
	DISS interview_6	they still have a habit of using many, many e-mails, back and forth, back and forth, and back and forth
	DISS interview_6	through e-mail
	DISS interview_6	There is a place on this database that I mentioned so that every single book, the information is updated weekly. When we look at it for our updates once a week, all of the production and editorial information is completely up to date.
	DISS interview_6	they're all up on the shared drive
	DISS interview_6	we use is a shared drive
	DISS interview_7	the technology piece is not a major focus, but we think of it as useful tools, and also things that we could archive and go back and look at stuff and be able to track how we got here. That's kind of how we think about the technology.
	DISS interview_7	Yeah, it's an incredibly complicated project, so we still have boxes and boxes of old copy as related to this somewhere
	DISS interview_7	For most of the jobs here, we don't actually have a manual of standard operating procedures.
	DISS interview_7	That's one of the ways, probably the primary way that I keep up with issues that are related to publishing. I read some publications, too. I read Publishers Weekly and things like Choice and Library Journal, and things like that that are really focused usually on publishing issues specifically, but also scholarly communications in general. I guess those are some of the primary ways that I stay updated on things
	DISS interview_7	we use SharePoint for our editorial board. When we gather reports, we share documents that way, and things like minutes for the meeting and all that kind of stuff
	DISS interview_7	We use a weekly wiki for staff meetings to post agendas and have people add to it, so we do

7) Outliers

Emerging Themes by Organization Size

(Outliers' Activities)

Organization Size	University Press	Coded Segment Examples
Large Organization Size (50 staff or more than 50 staff)	DISS interview_3	I sensed that when I came in, I observed that when I came in. with fresh eyes, that's a good thing, but I also wanted this consultant, who I had worked with on other projects in the past, come in and see if I was correct.
	DISS interview_3	We'll be hiring a consultant to help us do our own self-assessment. That person will also then be comparing us to competition, and so that will be big knowledge gains, where we're learning what other people are doing in our field, not just university presses, but for-profit presses and other people who we really do compete with in the marketplace.
	DISS interview_3	The librarians are purchasing the platform, purchasing the aggregation, but it's for patrons, and most of those patrons are scholars in the humanities and social sciences. That's one of the big projects where we're not just reading about best practices in platform development, not just reading about programming, but actually want to know what our users want to know, and so we're doing research like you're doing: quantitative surveys, qualitative interviews, putting people in front of the screen. That's a big, major knowledge acquisitions
	DISS interview_3	we will do a gap analysis and determine what kinds of activities and programs we need to put in place to get the vision to where we want to be, and then, in a year, we'll measure again
	DISS interview_3	We also just finished a major organizational culture assessment, and so that was done with quantitative and qualitative work, so we did a survey across all 130 people who work here, and we got a response rate of 88 percent, 111 responses to that.
Small Organization Size:(less than 25 staff)	DISS interview_1	In order to look at this reorganization, we brought in a trainer from our own university who was offered to us. We're still a little bit in progress with this, but she is kind of guiding us through what are the steps of our current procedures, and then we put all of those down and who is responsible for what and in what order. Then, after studying that, the next phase is going to be to look at, "Okay, what is the streamlined workflow? ... We're still a little bit in the middle of that, but I would say that is a positive example
	DISS interview_2	For example, marketing is one area. I was the marketing director at the previous press that I worked at. When I came here, marketing, we were only publishing at that point monographs, and the marketing on it was very straightforward. But, since then, we have started publishing more trade books, and nobody here had any experience with trying to market trade books to a national audience. While I was at my previous job, we did actually publish quite a few trade books, so I knew a little bit more than my colleagues here about how that's done.
	DISS interview_2	When I first came here, we were approached by a faculty member about publishing actual comics. I think that our experience publishing comic studies helped to lead the way in how to actually publish graphic novels. We were already used to using comics in our scholarship, but I think, also, to be frank, I'm a comic lover myself, and particularly of graphic novels. I had a lot of them, I've read a lot of them, and so I think that might be an example where my personal experience was useful in helping both the marketing department and the production department deal with particular challenges that are specific to publishing comics.

Philosophical Assumptions of the Mixed Method Approach for this Study

Beginning in the 1980s (Green et al., 1989), the mixing of qualitative and quantitative data in a single study has been popularly termed as mixed methods research (Johnson et al., 2007). In fact, mixed methods research is defined as "the type of research in which a researcher … combines elements of qualitative and quantitative research approaches (e.g. the use of qualitative and quantitative viewpoints, data collection, analysis, and inference techniques) for the broad purpose of breadth and depth of understanding and corroboration" (Johnson et al., 2007, p. 123).

Mixed methods approaches came from a pragmatism viewpoint (Patton, 1990). Pragmatism does not commit to one system of philosophy and is open to using multiple methods, different assumptions and different data collection methods. The researchers focus on the research problems and use the appropriate approach to understand the particular problem, instead of focusing on methods (Rossman & Wilson, 1985).

The design of mixed methods research addresses a problem in depth through qualitative data collection and analysis on the quantitative results (Creswell, 2015). Sequential mixed methods design collects data in a predefined sequence and then merges the results of the qualitative and quantitative data analyses.

For this mixed methods research, the researcher began with a quantitative strand (a bottom-up approach) and then a qualitative strand (a top-down approach) to compare to the quantitative results. This order provided multi-dimensional views from the employees' perspectives as well as from the management's perspectives. With the mixing of the two datasets, the similarities and differences in the data can be identified to generate a better understanding of the research topic.

Data Integration and Interpretation – QUAN + QUAL

The process of integrating the data from the QUAN + QUAL sets occurs at the end of a mixed methods study, bringing these datasets together after both datasets have been analyzed separately. The researcher listed the findings from each component of the study and considered whether findings from each method agree (convergence), offer complementary information on the same issue (complementarity), or appear to contradict each other (O'Cathain, Murphy & Nicholl, 2010).

There are four main types of integration of quantitative and qualitative data in a mixed methods study (Bazeley, 2009; Fetters et al., 2013; Maxwell & Loomis, 2003; Creswell, 2015): merging the data, explaining the data, building the data, and embedding the data.

For this mixed method research, the approach of "merging the data" was selected for the data integration and interpretation process, to compare the findings on the topic from the employees' level to the directors' level. This type of data integration allows each data set to occur as a single-method study, with the goal of integrating the results after both are completed (Creswell & Plano-Clark, 2011). At the point of mixing, conclusions or inferences were drawn to reflect what is learned by combining, comparing and synthesizing the study findings (Creswell, 2015).

At the end of the data analysis process, the mixing was conducted in order to determine how well the qualitative and quantitative data were integrated. The integration process started using the themes identified in the qualitative data set as the yardstick to match with the findings from the quantitative data (see Table 24). Several instances of convergence were identified from the comparison of these two datasets. The findings in the quantitative research portion matched with and supported the themes identified in the qualitative research portion.

Table 24: *Mapping of the QUAN and QUAL Datasets to the Conceptual Frameworks*

#	Convergence	Evidences in QUAN	Evidences in QUAL	Conceptual Frameworks Applied
1	Trust is the social norm in this close-knit society	Question 21 presented three statements on the respondents' perceptions about their coworkers. All three statements "I feel trustworthy with my coworkers' information," "If I encounter problems in finishing my job, I know my coworkers will help me out when I ask" and "My coworkers are willing to help and do not deceive for their own profit" received higher than 75% of the total counts added up in "Agree" and "Strongly Agree" categories.	DISS Interview_2 - I think, in the university press world where you don't hire somebody who doesn't have some experience in scholarly communications	Dervin's Sense-Making Metaphor
2	Full of Collegiality in the Organizational Culture	Question 20 asked respondents about their degree of motivation to share their knowledge and experience. 62.4% of 93 respondents indicated they were very motivated because their sharing would build a better company. 28% of the respondents indicated they felt an average level of motivation because they wanted to help their coworkers. This indicated a collegiality existed in the presses.	DISS Interview _1 - One interesting thing about university presses, we're very collegial, and so a lot of times we'll ask each other for advice. DISS Interview_2 – We are a very, I think, egalitarian and collegial organization. DISS Interview_5 - I would say the university press community, in general, is amazingly collegial.	Dervin's Sense-Making Metaphor Weick's Sensemaking Theory

Table 24: *Mapping of the QUAN and QUAL Datasets to the Conceptual Frameworks* (Cont'd)

#	Convergence	Evidences in QUAN	Evidences in QUAL	Conceptual Frameworks Applied
3	In-person communication is important	When respondents were asked in Question 24 about formal activities for sharing knowledge and experience, 42.53% of respondents chose "Team Meeting" and 32.18% wrote in about different types of in-person meetings.	DISS Interview 3 - Our marketing department is split between floors here, and so I've been told that that's one of the reasons why the marketing department is not collaborating and sharing knowledge as they should be. The word "meeting" appeared 34 times and the word "conference" appeared 6 times across the eight interview transcripts.	Weick's Sensemaking Theory
4	Knowledge management concept is unfamiliar	When respondents were asked in Question 26 what changes would they like to see in knowledge sharing inside their organizations, 28% of respondents would like to have better technology system, tools and training; and 7% of respondents wanted to have a central hub that can be accessed by staff to avoid duplicated effort in documentation.	DISS Interview_6 - I will say the one thing I wasn't sure about, referring to my question in the beginning, "Did this relate to knowledge sharing within the company?" I wasn't sure if it also referred to some of these big notions of open access and the ways in which scholarly publishing functions in the world right now.	Nonaka and Takeuchi's SECI Model

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In general, four convergences were found to be in common across the QUAN and QUAL portions. The following paragraphs illustrate these convergences in detail.

Convergence #1 – Trust is the Social Norm in this Close-knit Society

Trust was part of the social norm concerning the relationship among staff in the university presses. Staff were also empowered by management to share ideas. They trusted each other and believed coworkers were helping each other with a sincere, not selfish mindset. Evidence for this insight was found in both the QUAN and QUAL datasets. From the quantitative survey Question 21, 81 out of 91 participants believed that their coworkers were willing to help them and their coworkers would not deceive them for their own profit. Small to medium size university presses were found to have a tighter-knit society.

The findings from the QUAN portion also matched a theme found in the transcripts from the QUAL portion, for example:

DISS interview_7   I know that anybody here would do anything for me if I asked them to, and I think that they feel that way about one another, too. There is not a single position where somebody is really off by themselves.

Convergence #2 – Full of Collegiality in their Organization Culture.

There was evidence that the university presses are full of collegiality in their organizational culture. Organizational members were willingly to share and help each other. From the quantitative research, on Question 19 about how they are motivated to share knowledge and experience, 92 out of 93 participants indicated they were motivated to share their knowledge. Fifty-eight out of these 93 participants chose to say they were "very motivated [to share their knowledge] because I think sharing mine will build a better company." The findings from the QUAN study on all employees matched a theme found in the transcripts from QUAL, as several directors used the exact word "collegial" when they described their organizations in general.

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DISS Interview_1	One interesting thing about university presses, we're very collegial, and so a lot of times we'll ask each other for advice
DISS Interview_2	We are a very, I think, egalitarian and collegial organization
DISS Interview_5	I would say the university press community, in general, is amazingly collegial.

Convergence #3 – In-Person Communication is Important

All sorts of meetings such as staff meetings, project meetings, brown bag lunch presentations/discussions and drop-in meetings across the presses were the main venue for sharing. From the quantitative research, Question 24 asked about formal activities for sharing knowledge and experience, and 42.53% of respondents chose "Team Meetings" and 32.18% chose to use a write-in response about different types of in-person meetings. The findings in the QUAN section on all employees matched to a theme in the transcripts from QUAL, as the word "meetings" was mentioned thirty-four times across the eight interview transcripts. In fact, two directors indicated that the proximity of staff offices (i.e., opportunities for staff members to have direct encounters) would be a factor in the level of knowledge being shared in their organizations.

DISS Interview_3	Our marketing department is split between floors here, and so I've been told that that's one of the reasons why the marketing department is not collaborating and sharing knowledge as they should be.

Convergence #4 – The Knowledge Management Concept is Unfamiliar.

Evidence from the study indicated that the concept of knowledge management is unfamiliar to members of university press organizations. Internal knowledge-sharing took place via internal meetings within the organization. The main vehicle for external knowledge-sharing was the Association of University Presses' annual conference and their listservs. There was no evidence that any sophisticated knowledge management system had been implemented. This finding was reflected in the quantitative survey's open-ended Question 26, with the result that 28% of the 68

narratives called for better technology facilities and training. The second highest frequency level on this measure was that 15% of the 68 narratives sought more inter-departmental knowledge sharing. These findings from the QUAN portion aligned with a theme in the transcripts from the QUAL portion, as questions were being asked in the interviews about what knowledge management really was about. For example:

DISS Interview_6 I will say the one thing I wasn't sure about, referring to my question in the beginning, "Did this relate to knowledge sharing within the company?" I wasn't sure if it also referred to some of these big notions of open access and the ways in which scholarly publishing functions in the world right now

Validity and Reliability

QUAN

For the quantitative approach, validity includes external validity and internal validity. Validity is about the research accuracy, the truthfulness of the data and the degree to which the data is representative of and generalizable to the general population. The demographics portion of the survey questionnaire was used to identify the representativeness of the data from the sample. The second part of the survey questionnaire was designed with a reference to several published survey articles on knowledge-sharing. To ensure face validity, a mini-version of a pilot study, among librarians who worked closely with the University of Tennessee's University Press, was conducted to pre-test the survey research instrument. A statistical power analysis was conducted to calculate the required sample size and to estimate the margin of error. Although the collected samples in the QUAN met the required sample size in the power analysis, the low response rate in this survey was a concern regarding the meaningfulness of the data. This concern was offset by the conclusion of the article "Does Response Rate Matter?" (Carley-Baxter et al., 2009). The findings of that research article indicated that "it would appear that the perception among social

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science researchers that journals weight response rates heavily in the manuscript review process is unfounded". Instead of making judgments merely on the response rate, the article concluded that "most journal editors think about any manuscript's worth or merit based more on intangible or global concepts, such as design (be it sample or questionnaire design) than they do on measures of survey quality" (Carley-Baxter et al., 2009). Therefore, the survey design is more important in gauging the study's external validity.

Reliability was assessed through internal consistency (Singleton & Straits, 2010). Cronbach's alpha (Cronbach, 1951) was utilized to estimate the reliability (internal consistency) of the measurements and to get a sense of the validity and reliability of the particular scale that related to the sample (Grinnell & Unrau, 2010). Cronbach's alpha tests were conducted and produced over .70 on reliability on both the culture and trust scales. According to Hayes (2005), a Cronbach's alpha of .70 is "the magic number" for the scale's reliability (p. 128).

Reliability

Scale: Culture

Case Processing Summary

		N	%
Cases	Valid	95	89.6
	Excluded[a]	11	10.4
	Total	106	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.718	.722	11

Figure 9 - Reliability - Scale of Culture

Reliability

Scale: Trust

Case Processing Summary

		N	%
Cases	Valid	91	85.8
	Excluded[a]	15	14.2
	Total	106	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.752	.753	3

Figure 10 - Reliability - Scale of Trust

In addition, methodological triangulation for this mixed methods research was also used to verify the truth of the study's findings, with the combination of two data sources to investigate the same phenomenon, in order to counterbalance the deficiency of a single strategy and thereby increase the credibility and validity of the results.

QUAL

For the qualitative approach, validity is about the appropriateness of the method used and reliability is about consistency. Qualitative researchers focus on the causes of bias rather than on eliminating them. Therefore, as mentioned in the literature (Feilzer, 2010), the following section provides a reflexive section in the finding report about the role of the researcher in the research process, and the context of the research design and its methods. To ensure the reliability of qualitative data, constant data comparison was used to identify emerging behavior categories, and the triangulation method was used to compare patterns from the qualitative research with the findings of the quantitative research (Creswell, 2007). Quantitative and qualitative methods in this mixed methods research were combined with the goal of increasing the validity of the measures through triangulation. Several themes in the phenomenon were assessed to determine if convergence across the methods exists, to generate a deeper understanding (Edmonson &

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McManus, 2007).

In the data analysis stage, the researcher used Grant McCraken's framework to determine the categories, relationships, and assumptions that inform the respondent's view of the topic (McCraken, 1988). The coding process identified words and phrases that related to relational/interpersonal factors as well as those indicating content factors. For example, when the participant spoke about a coworker who was "collegial," this was categorized as relational. When the participant spoke of users who "knew what they were doing," this was classified as content.

Reflexivity Statement of the Researcher

An individual interview method was used for this qualitative research and the researcher acted as an instrument to collect data. Each interview was conducted according to the participant's preferences, either face to face or over an electronic medium, as that was most convenient and comfortable for the interviewee. The researcher was mindful that the participants were given the lead in "setting the pace" of the interviews. By adopting a "taking a back seat" style in using a less active setting for the interviews to take place, the participants were provided with a feeling that they were exercising a measure of control over the interview process.

Within the context of this research study of a scholarly publishing setting, the researcher took into consideration that the interaction with participants might be influenced by her own professional background, experiences and prior assumptions. Knowing about the researcher's professional background and affiliation with academic fields could have impacted participants' willingness to talk openly and truthfully about their experiences, or affected how this knowledge might have shaped what was said.

CHAPTER FIVE

DISCUSSION AND CONCLUSIONS

This chapter provides a discussion, lessons learned and recommendations as conclusions. The limitations of the study are also presented, along with suggested areas for future studies that may build on these findings.

Discussion

Scholarly literature on knowledge sharing and knowledge transfer have been saying that an open culture and trust are the two basic factors that are most influential on individuals' knowledge seeking and sharing. The level of knowledge sharing is significantly impacted by the level of trust (Rutten, Blaas-Franken & Martin, 2016). The investigation and findings of this research support this assertion. With a collegial culture and a trustful social norm in university presses, this harmonious environment has cultivated a positive atmosphere for knowledge sharing and transfer among employees.

This study was designed to understand knowledge practices of university presses, with specific foci on behavioral, cultural, social and technological issues. An examination of the findings on all of these issues revealed that employees' personal knowledge-seeking behavior was shaped to a certain degree by the culture and social norm in which they were immersed. Personal interactions to share tacit knowledge in meetings and at conferences were the main channels for individuals to seek knowledge and for coworkers to share knowledge. By applying Dervin's Sense-Making Metaphor, the individuals working within the context of a collegial culture, with heavy levels of trust in other people as knowledge sources, are more likely to engage in knowledge sharing and transfer behavior to fill the tacit knowledge gaps of the individuals involved.

In fact, the university presses' unified social norm can be seen in their use of the popular literature (explicit knowledge sources) in their specific professional areas such as Publishers Weekly and Scholarly Kitchen. In the results from the survey and interviews conducted for this study, the Association of University Presses (AUP) email listservs were considered to be the major knowledge sharing platform for news and updates and for connecting with their fellows in the presses.

In reviewing the types of knowledge barriers previously identified by scholars, the university presses do not have personal barriers as the employees are motived and eager to share knowledge, facilitated by their open, western, organizational culture. However, the presses do face content barriers when employees do not understand some procedures, such as how to compile the financial statement that was mentioned in one director's interview. Technological barriers were also identified as major deterrents to facilitating knowledge infusion among departments.

In general, being too busy and the unavailability of coworkers and technologies were the major issues with knowledge sharing, that were recognized by university press employees. Issues with the geo-proximity of staff was the major concern on the directors' level. It is not surprising that the dearth of sufficient time is a barrier to engaging in knowledge curation, given that many employees are covering more than one position, with the downsizing trend of university presses. However, the fact that the current knowledge-sharing behaviors relied solely on people's interactions, and that the presses are operating without a proper explicit knowledge management system, these conditions may be the reasons the employees are perceiving that unavailable coworkers and the geo-proximity of staff are the knowledge barriers in seeking operational knowledge. The lack of a good technology system and training was identified as a barrier in the survey of all employees. This particular barrier was considered to be a more major obstacle in

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small-size press organization sizes than in large-size organizations. There was a high frequency level for the write-in response recognizing the need for "better technology systems, tools, training" for knowledge management.

Another objective of this research study was to explore the current knowledge retention practices in university presses. Most certainly, there were knowledge-sharing activities occurring in the presses. However, although knowledge was being shared, it was not being captured for future uses, so the current approaches might not be a complete solution. The findings indicated there was not only no sophisticated knowledge retention mechanism or policies in place to organize or classify operational knowledge, but also that the concept of knowledge management or knowledge curation were unfamiliar in university presses. This matches with another scholarly article's conclusion that organizations generally do not formulate any knowledge retention strategies even though they believed that knowledge is crucial for success (Liebowitz, 2008). In the sense of knowledge management, this situation is alarming. Even though the university presses are a close-knit society, with internship programs, people retiring or switching jobs within the press circle, and organizations requiring new hires to have prior experience in their profession, the presses might not realize that a knowledge bleed (Liebowitz, 2008) is happening until the moment an employee actually leaves or retires.

Lessons Learned

Through the process of working on this dissertation, the researcher learned some valuable lessons along the way to share with the readers. The first lesson learned was about the gender question in the quantitative survey. This issue was not found in the earlier literature on survey questionnaire development. For the gender question, participants were asked to identify as male or female. However, societies have changed, and a third option is required. When the Association of University Presses reviewed the survey questionnaire before forwarding the survey out, they

requested offering a non-binary "prefer-not-to-specify" gender option, even though respondents already had the option not to answer the question. The reasoning from the AUP was that the publishing community was becoming much more sensitive to multiple vectors of diversity and the binary gender division had the potential for causing someone to be excluded. With this change request, the survey schedule was delayed to seek an approval from the IRB on the amendment.

Second, retired university press staff members remain listed as subscribers to the Association's listserv. The AUP has two members-only subscription listservs: a general discussion list with approximately 1,200 subscribers and a director listserv with 147 subscribers. Individual university press organizations are not required to report their staff sizes to the AUP, so the Association does not have that kind of information to use to manage their listserv registrations. Since they do not have individual membership records, their data on press employees was not comprehensive. The AUP relied on member presses to volunteer to send their employees' information to the Association for its annual directory update process. Therefore, the two listservs were populated through a purely self-selected subscription process among press members. Former press employees could choose to stay on the listserv even though they were no longer affiliated with the presses. This was the reason that the researcher had to remove one record from the survey sample after it was identified as being from a location where the only university press had closed down in 2002. The lesson learned from this issue is not to assume that everyone subscribed to an active listserv is currently working in the field. A screening question should be included in the survey, to ask if the participant currently works with a university press.

Third, the effects of decisions or assumptions related to questionnaire administration have implications for the research process. Protecting the participants' privacy was one of the golden rules that the researcher kept in mind when the survey instrument was designed. Therefore,

questions on respondent demographics were kept to a minimum. However, it was in the data analysis stage that the researcher realized that having an understanding of the organization size associated with each completed survey would help to illuminate knowledge sharing in the operations flow. Although the use of IP addresses in an indirect way was successful in identifying the organization sizes that participants were affiliated with and solved the problem, it was a tedious task. It took the researcher a tremendous of time and effort to fulfill this task, not to mention the requirement of submitting an amendment to IRB for their approval of using IP addresses. It would have saved the researcher a lot of time if organization size was simply self-disclosed by each participant.

Fourth, the rate of return of the completed surveys in this study was below the researcher's expectation, even though the sample size obtained still met the estimate specified by the statistical prior power analysis. The low survey response rate confirmed the scholarly literature discussion that stated that response rates to online surveys always are much lower than those obtained using paper surveys (Cook et al., 2000) and a low response rate to online survey research is an increasingly common phenomenon (Porter & Whitcomb, 2005). Another source said that there is a lower level of interest in taking online surveys than in paper surveys administered in person, with or without incentives (Nulty, 2008). As the responses were only from North America, there was no data obtained to test the planned research question on culture issues, to investigate the impact of racial differences in sharing knowledge.

Fifth, a common phenomenon that was observed was that knowledge management concepts were not well known among the university presses' society. Knowledge sharing was mistakenly interpreted as being the same as the presses' role in disseminating knowledge in the scholarly communication sector. Some interviewees considered knowledge management to be the same as

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Human Resources and some considered it to be akin to strategic management. In order to clarify the concepts, the researcher explained the concepts prior to conducting the final two interviews (Interview_7 and Interview_8), to test out if there were differences in the collected data as compared to Interviews #1through #6. To conclude this mini-experiment, no differences tied to the experimental treatment were found in the data collected, across the eight interviews.

Last, the interviewees did not feel comfortable with being a solo talker in the conversation when they were being interviewed online or in person.   The reason might be the impact of a collegial culture, and its trait of being respectful to anyone in the conversation by not being a dominator. Therefore, if there are more resources available like time and funding, a stratified-sample focus group interview setting would be a better choice for a collegial culture group than the individual interview setting, particularly for the investigation of the comparison of different ethnic groups' knowledge behavior.

Limitations of the Study

As with any other research endeavor, there are limitations that fall beyond the researcher's control. The primary one in this case is that this research project tried to understand the knowledge practices in the scholarly publishing environment. Knowledge management is a research topic in business operations research. It is difficult for researchers in business-related disciplines to generalize their research findings across a diverse range of businesses, in order to be useful for a wider audience. Instead, most researchers select a particular niche of a small business sector to examine (Burgess, 2002). Therefore, this research project mainly focused on knowledge-intensive firms, particularly in the scholarly publishing sector of university presses. There are many other types of organizational environments, and their knowledge practices may not be the same as those

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of university presses. The findings from this research provide a general understanding of knowledge practices or knowledge-sharing barriers that the non-commercial publishing sector may face, but the research may or may not be adaptable to other industry sectors.

In addition, there are matters and occurrences that arose in this research study that are out of the researcher's control, such as having limited access to only certain people in each organization among the university presses, for the distribution of the survey instrument and administering of the interviews. Some employees and managers chose not to participate or gave incomplete answers. The specific limitations related to the data collection/analysis for this research project are listed in full in the quantitative (QUAN) and qualitative (QUAL) sections.

For the QUAN portion: First, self-selecting non-probability sampling was used, based on participants' volunteering. Non-probability samples may not be very representative, even when the full population was exposed to recruitment. Second, the survey response rate was low, with participation by volunteering only. The survey was mainly filled out by female respondents, so there might be a gender bias, particularly in the technological issues. Survey fatigue has been reported as a well-documented phenomenon (Porter, Whitcomb, & Weitzer, 2004). Some participants in the study dropped out for unknown reasons after completing the demographics section. Although the sample size, after it was cleaned up, met the requirement of the power analysis, the margin of error rose from the standard 5% to 8%. There is a possibility of getting lower-quality responses from the participants toward the end of the survey.

Third, a research quorum existed. Participants were mainly those subscribed to the official listserv maintained by the Association of University Presses. The invitation to take the survey might not have the opportunity to reach those employees or directors who did not subscribe to

these two listservs. Moreover, no survey participants came from the member presses in Europe, Asia or Africa. The survey questionnaires were filled out by participants from North America, which meant that the responses on the culture factor were dominated by an open Western culture. Without enough data, it was impossible to address the potential effect of racial differences and organizational culture to determine the correlation between variables like "culture" and "knowledge-sharing." Because of this reason, the original research question about testing these variables has been removed.

Four, university press members who did not volunteer to participate might differ in some ways from those participants in both the quantitative and qualitative portions. Therefore, results from the participants might have been skewed toward not reflecting a holistic picture of the knowledge sharing practices and perspectives.

Here are the limitations of the study for the QUAL portion: First, the method employed in this research was the long interview with a critical incident approach, which meant that the participants had to remember stories that occurred among themselves and their coworkers. As the knowledge management concepts were unfamiliar to participants, many were puzzled at first by some questions. The participants were able to recall one or two particular incidents from their organizational setting, but they usually reverted to talking about the general matters they shared about in their routine publishing activities.

Second, the nature of this research project was a doctoral dissertation and so the coding and interpretation were conducted by one person. The researcher was the instrument in data collection. Personal bias might occur in interpretation, as different people might have varied points of views about coding and grouping.

Third, the results of the interview data might be skewed by the way in which they were collected. This study relied on the perceptions and experiences of the directors. Since the researcher was associated with the academic field under scrutiny, the participants' responses could have been influenced by social desirability. In other words, the participants might have felt pressured to answer in ways that did not truly reflect their opinions. If the interview data had been collected by a person with no connection to the academic field, perhaps the response would be different (Patton, 2002).

Areas for Future Research

Some of the limitations described above may also be applicable as areas for future research. These include but are not limited to the following. First, a follow-up qualitative study involving non-participants from university presses outside North America should be conducted to investigate the reasons for their non-participation in this research. Second, because no data about ethnicity were obtained in this research, a future comparative quantitative study using a stratified sampling method should be used to examine the demographic differences, particularly for the ethnicity-culture interaction issue, in knowledge-sharing practices.

This research project in the knowledge management field may be helpful in introducing a structured approach to study knowledge sharing within knowledge-intensive firms in scholarly communication. The findings should lead to the investigation of how possible positive results can be transferred to other commercial sectors in terms of the organizations' knowledge needs, specific knowledge assets, knowledge gap issues, barriers to knowledge flow and knowledge management.

Similar to Nunes's study (Nunes et al., 2006) stating that "Knowledge acquisition and embodiment was perceived as a crucial task" by all interviewees, all interview participants in this research project unanimously agreed that knowledge sharing is a source for innovation. Several

interviewees indicated that this research project reminded them to think about knowledge management. However, they were unsure if their respective organizations were capturing and managing this core intangible asset as effectively as they should be. Curiously, they all agreed that knowledge should be better managed and stored within their own organizations, and that the curation of knowledge could probably result in greater innovation and profitability for their services. It would be a good follow-up research topic, to study how and what the directors have done to address the knowledge management mechanism after being interviewed.

Recommendations

Initially, I had so many ideas for a dissertation topic, but I found my passion for this research (and my Ph.D. topic) through my 2016 individual study project about knowledge management by major commercial scholarly publishers, that was a part of my program course work. I thought I knew about knowledge management as a topic at that point, but very soon I realized I had more questions than answers. Therefore, this research on the knowledge-sharing topic is just at the tip of the knowledge iceberg in the research field of knowledge management. Through the interviews and the survey for this research, it is hoped that they would be able to reveal the importance of knowledge-sharing that the university presses need at this moment for sustainability.

Prior to starting the interview, the researcher made small talk with each director. Later, it came to the researcher's attention that there are similarities in the situations facing university presses and academic libraries for survival. Both sectors are not-for-profit oriented, and they exist for disseminating scholarly information. There are sustainable business models that the academic libraries have used, that can also be applied to the university presses, so as to visualize the organization's value to the host university, to conduct outreach to faculty to cultivate collaboration

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opportunities, and to enhance the publishing role in preserving and disseminating their own university's faculty's intellectual knowledge.

Per the discussion about the three research questions contained in the Discussion section, it underscored that there is an urgent need for university presses to formulate a knowledge retention strategy. It needs to identify what knowledge may be lost, what the consequences of loss are to their organization and what actions it should take to retain that knowledge (Doan et al., 2011).

The university presses rely heavily on the Association of University Presses as a medium to share information and knowledge. The researcher suggests creating local chapters or consortia within the Association. The local chapters can enhance the sharing of knowledge for innovative ideas on special topics in the local communities as well as to enhance the uniqueness of each university press in publishing with specific subject focuses to represent local scholars. The presses may consider adopting the strategies that commercial publishers are using and should cultivate more collaborative opportunities with their university faculty or their university libraries.

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APPENDICES

QUAN

Q (1) Informed Consent Statement

Introduction

You are invited to complete this survey, approved by University of Tennessee Institutional Review Board and administered by an Information Science doctoral student at University of Tennessee, because of your affiliation with the Association of University Presses (AUP).

The purpose of this survey is to collect online sample information about your knowledge practices such as how you seek knowledge in handling your daily work, your experience in sharing knowledge with your co-workers and how you retain that knowledge in your organization.

Benefits

Your responses to this survey will be used in two ways:
(a)   Your responses will be helpful in identifying the important issues in Knowledge Management.
(b)   Results of this research will be useful in the field of Information Science studies, particularly to those at institutions seeking to better understand perceptions of knowledge management practices.

While participants who complete the survey will receive no immediate benefit, their involvement and feedback will help inform new initiatives for knowledge management studies.

Participation

Approximately 1,200 members on the AUP listserv received an invitation to participate in this research by completing the online survey.

Your participation in this research will involve only the completion of the following self-administrated online survey, which should take no more than 20 minutes to finish. Please complete it in a private setting. Participation in this research is entirely voluntary. Clicking on the "I agree to participate" button (at the bottom of this page) indicates you are over 18 years old and consent to participate. If you click on "I do not want to participate" button (at the bottom of this page), the system will end this survey.

Confidentiality

The online survey is completely anonymous. Should you choose to participate, no one is able to identify your response. Aggregated survey data, after cleaned and anonymized, may be put in an

open repository.

The researcher of this study has taken great care to ensure your protection by: (a) excluding questions that could potentially identify the participant, and (b) providing the option to skip any item in the survey.

<u>Compensation</u>

You may exit the online survey at any time without penalty. However, once you submit your completed survey, your online data may not be withdrawn as the survey is anonymous and there will be no way to locate your responses within the data set. No payment or other compensation will be given to participants for their involvement in this research.

<u>Risks</u>

There are no foreseeable risks to you, other than those you encounter in everyday life, if you complete this survey, as it contains no items that ask about sensitive or personal information.

<u>Contact Information</u>

If you would like to obtain more information about this study, please feel free to contact the researcher via email at judyli@utk.edu. If you would like more information about your rights as a research participant or have questions about university policies and procedures for research involving human subjects, please contact the Compliance Officer and IRB Administrator for the University of Tennessee Knoxville, telephone 865-974-7697.

Thank you for your time,

Judy Li (Doctoral Student at University of Tennessee)

Choose from

- I have read the above information. I agree to participate in this study.

- I do not want to participate

Qualitative Research – Informed Consent Statement

Informed Consent Statement

Research Project Title: Knowledge Sharing Matters

INTRODUCTION

You are invited to take part in a research interview, conducted by Judy Li, a doctoral student, at the University of Tennessee. The purpose of the research is to understand how knowledge is being used and shared in your company.

INFORMATION ABOUT PARTICIPANTS' INVOLVEMENT IN THE STUDY

The interview will last about 30 minutes and it will be audio recorded. You don't need to answer any questions if you do not want to and you can stop the interview at any time. Information from this interview will remain confidential. To protect your privacy, you will be referred with a code name in the recording. The audio recording will be erased after the transcription and the research project are complete. You must be 18 years of age or older to participate.

RISKS AND PROTECTIONS

The risk presented is not greater than what a person might reasonably expect to encounter in everyday life. However, the risk of a breach of confidentiality is always possible. Steps have been taken to minimize this risk.

BENEFITS

Your participation in the research will help the researcher identify the use and importance of knowledge in organizations that leads to a contribution in the research of Knowledge Management.

CONFIDENTIALITY

The information gathered in this study will be kept confidential. The interview is recorded and accessed only by the researcher conducting the study and a hired transcriber agency. No reference will be made in written or oral reports that could link participants to the study.

COMPENSATION

There is no known compensation of any kind.

CONTACT INFORMATION

If you have questions at any time about the study or the procedures, you may contact the researcher, Judy Li, at judyli@utk.edu, and office number 1-865-974-0013 or the advisor Dr. Suzanne Allard at sallard@utk.edu. If you have questions about your rights as a participant, you may contact the University of Tennessee IRB Compliance Officer at utkirb@utk.edu or (865) 974-7697.

PARTICIPATION

Your participation in this interview is voluntary; you may decline to participate without penalty. If you decide to participate, you may withdraw from the interview at any time without penalty and without loss of benefits to which you are otherwise entitled. If you withdraw from the interview before it is completed, your recording will be destroyed. This research has been reviewed and approved according to the University of Tennessee IRB procedures for research involving human subjects.

FUTURE DATA USES

Your research information may be used for future research studies or shared with other researchers for use in future research studies without obtaining additional informed consent from you. If this happens, all your identifiable information will be removed before any future use or distribution to other researchers.

CONSENT

Please sign your choice below to indicate you have read the above information. You are 18 years of age or older. You agree to participate in this study at the location of your choice.

I have read the above information. I have received a copy of this form. I agree to participate in this interview and approve of using my choice of the location to conduct this interview.

Participant's Name (printed) _____ Participant's Signature _____

IRB NUMBER: UTK IRB-17-04189-XP
IRB APPROVAL DATE: 01/23/2018
IRB EXPIRATION DATE: 01/22/2019

Qualitative Research – The Interview Guide (as a guideline only)

Introduction
Thank You for meeting with me today. I am currently researching knowledge practices on University Presses. Specifically, I am interested in exploring how University Presses share knowledge internally and retain knowledge when there is staff turnover. I am also interested in any past critical incidents on knowledge practices in your organizations and your feelings related to this topic.

Informed Consent form
To make you feel comfortable, I would like to present you the consent form. I'll answer any questions you have about what this study involves. I consider you an expert on this topic and would appreciate your ideas, perceptions and opinions.

- This form explains how we are doing our research. The purpose of this form is to help you decide whether you want to be interviewed or not.
- The interview will last about 30 minutes and it will be audio recorded. You don't need to answer any questions if you do not want to and you can stop the interview at any time.
- We will be using the information from the interview to help us create a better understanding about knowledge practices.
- Information from this interview will remain confidential.

Section A: General information on access to and use of information and knowledge, resources

Warm-up questions

A1.   Tell me a little about your company and your job?

A2.   How do you keep yourself updated on issues related to performing your daily work?

A3.   Specifically, give me a past incident of how did you do when you were preparing for a project (i.e. whom you consulted with and the process you obtained information)?

A4.   When you couldn't find information in those resources, where did you go to find it?
       Who would you contact? OR Who did you contact? *In that order?*
       What is the role of (X in) when preparing the project?
       Do you get enough information for (x) planning purposes?
       Would you contact colleagues from other offices for information on (x)?

A5.   *Were the resources and information adequate in the preparation of projects? What else might have helped you and the project?*

A6.   *Based on the experience you are sharing with us, do you feel like online means of communicating and sharing knowledge will be a priority for you in the future? How did you capture that sharing? What tools did you use?*

If Yes: In what specific ways do you see yourself using these? Do you see any limitations?

Section B: Insights from experience – lessons learned, best practices, conclusions and recommendations for consideration by others

An important part of knowledge management is collecting experience in the form of lessons learned and best practices. The next set of questions relates to this aspect.

B1.   Based on your past experience you mentioned in A3, what "lessons learned" and "best practices identified" relating to "knowledge management in work processes" can you share with me?

B2.   In the sense of Intellectual Capital, what have been the challenges you and the project struggled with most?

B3.   What are the top pieces of advice you'd give to a colleague on a "DOs" and "DON'Ts" list in job knowledge sharing? Would you also explain why they are important?

B4.   At what point during projects do you think it would be most useful to capture lessons learned and good or best? Practices? Who do you think would be the best person to do this?

Open-ended questions
- I know there are a lot of challenges in finding ways to perform job tasks and some challenges are rather personal. Is it OK if I ask you some of your personal feelings and experience in encountering issues? Could you also talk about those issues?
- How did you choose what solutions to apply?
- What principles guided your actions?
- Did you consult anyone in your organization when the incident happened?
- That is an interesting event. Could you tell me more? What would be your next step if the solution you used turns out to be a dead end?

Section C: Comments and Feedback

C1.   Do you have any final comments or remarks having gone through this interview?

C2.   Are there any questions you think we should add, or changes you think will improve the interview from your end or ours?

Probes
Remember to constantly probe for details using non-verbal active listing cues as well as words like "tell me more about that", "what did that mean to you", "how did you feel at that moment', "can you elaborate more" and "please go on".

Closing
Thank you for sharing your time and insights today.
Is there any other information that you think I should know about?
Do you have any questions about this interview, or what we talked about?

Key message 1: You've been great. Thanks so much for sharing your insights and your experiences.

Key message 2: Please don't hesitate to send us additional information or remarks by e-mail, if anything comes to mind later on.

Wrap-up
Do you have anything else you want to share with us at this time?
May we contact you in the future if we have other follow-up questions?
I appreciate you sharing your valuable time and your insights with me. I know I learned a lot from our conversation. I'll provide you with the transcript of our conversation if you would like. If any other thoughts come to mind about the topic we discussed, please feel free to contact me.

Dear XXX,

Ref: Project name – Knowledge Sharing Matters

Hope this email finds you well.

I am a doctoral student at the University of Tennessee currently undertaking a study on Knowledge Sharing in University Presses under the supervision of the Dissertation Committee. Output from the study is intended to benefit organizations like yours in the areas of quality improvements through the exploitation and optimization of knowledge management.

I would like to invite you to participate in an open-ended interview during the AUP 2018 annual meeting in San Francisco, relating to the above research based on your expertise and years of experience in the Presses. The purpose of the interview is to understand knowledge practices in your organization and to investigate knowledge barriers on the knowledge management issues. The interview will last for about 30 minutes. Please note that your responses will be treated as highly confidential and transcripts will not contain reference to any persons (including yourself) or organizations.

Should you be willing to participate, please email me your available dates and time during the week of June 17 – 21 in 2018 and the choice of your location. If you prefer an online Zoom interview (during or out of this period), please contact me about your available dates and times.

The summary of results will be available at the conclusion of the project. Should you wish to obtain a copy of this, please let me know. Thank you very much for your consideration of this invitation. Your participation is highly valued as it will contribute to the understanding of knowledge practices that leads to good strategic planning within the University Presses.

I look forward to hearing from you.

Your Sincerely,

Judy Li
The Project Researcher
University of Tennessee
865-974-0013
judyli@utk.edu

Appendix D – Survey (Quantitative Research)

Default Question Block

Informed Consent Statement

Introduction

You are invited to complete this survey, approved by University of Tennessee Institutional Review Board and administrated by an Information Science doctoral student at University of Tennessee, because of your affiliation with the Association of University Presses (AUPresses).

The purpose of this survey is to collect online sample information about your knowledge practices such as how you seek knowledge in handling your daily work, your experience in sharing knowledge with your co-workers and how you retain that knowledge in your organization.

Benefits

Your responses to this survey will be used in two ways:
(a) Your responses will be helpful in identifying the important issues in Knowledge Management.
(b) Results of this research will be useful in the field of Information Science studies, particularly to those at institutions seeking to better understand perceptions of knowledge management practices.

While participants who complete the survey will receive no immediate benefit, their involvement and feedback will help inform new initiatives for knowledge management studies.

Participation

1,200 members on the AAUP-L listserv received an invitation to participate in this research by completing the online survey.

Your participation in this research will involve only the completion of the following self-administrated online survey, which should take no more than 20 minutes to finish. Please complete it in a private setting. Participation in this research is entirely voluntary. Clicking on the "I agree to participate" button (at the bottom of this page) indicates you are over 18 years old and consent to participate. If you click on "I do not want to participate" button (at the bottom of this page), the system will end this survey.

Confidentiality

The online survey is completely anonymous. Should you choose to participate, no one is able to identify your response. Aggregated survey data, after cleaned and anonymized, may be put in an open repository.

The researcher of this study has taken great care to ensure your protection by: (a) excluding questions that could potentially identify the participant, and (b) providing the option to skip any item in the survey.

Compensation

You may exit the online survey at any time without penalty. However, once you submit your completed survey, your online data may not be withdrawn as the survey is anonymous and there will be no way to locate your responses within the data set. No payment or other compensation will be given to participants for their involvement in this research.

Risks

There are no foreseeable risks to you, other than those you encounter in everyday life, if you complete this survey, as it contains no items that ask about sensitive or personal information.

Contact Information

If you would like to obtain more information about this study, please feel free to contact the researcher via email at judyli@utk.edu. If you would like more information about your rights as a research participant or have questions about university policies and procedures for research involving human subjects, please contact the Compliance Officer and IRB Administrator for the University of Tennessee Knoxville, telephone 865-974-7697.

Thank you for your time,

Judy Li (Doctoral Student at University of Tennessee)

○ I have read the above information. I agree to participate in this study.
○ I do not want to participate

Demographics Section -

Region of your organization

○ North America
○ South America
○ Africa
○ Europe
○ Asia
○ Others

Your Gender is

○ Male
○ Female
○ Prefer-not-to-specify

Your age is

○ Above 18 and younger than 30
○ 31 - 39
○ 40 - 49
○ 50 and above

How long have you been working in your organization? What are the three main responsibilities of your job position? (write-in)

> [   ]

How many staff do you supervise?

- ○ less than 10
- ○ 10 to 50
- ○ 51 to 100
- ○ more than 100
- ○ I do not supervise

Knowledge Practices Section -

How did you acquire the skills and expertise that you use in your job? (ref:B)

- ○ from supervisors or co-workers in this organization
- ○ through self-learning
- ○ through formal training
- ○ at my last job
- ○ elsewhere

How often do you need to ask information from your co-workers to perform your daily job? (ref: B)

- ○ Never
- ○ Occasionally
- ○ Once a week
- ○ Once a month
- ○ Daily

Where would you look for knowledge that you need to do your work? (ref: B)

- ○ In paper-based documents

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○ In our team/department's members' mind

○ In our central information system

○ On my personal or workstation computer/hard drive

○ Other (write-in) [ ]

What are the prohibitions in instances that you were unable to share or receive knowledge and/or best practices from your team members? (ref: B)

○ Time limitation

○ No support to share

○ No motivation to share

○ No right tools available

○ Other (write-in) [ ]

I depend on documented procedures to do my work when I have questions in fulfilling my job tasks. (ref: B)

○ Strongly agree

○ Agree

○ Neither agree nor disagree

○ Disagree

○ Strongly disagree

In my organization, I share my knowledge with co-workers because (ref: C)

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I am an important part of my organization network	○	○	○	○	○
I have many connections in my organization to share knowledge	○	○	○	○	○

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	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I am happy to share my knowledge at work in order to improve my organization daily operations	O	O	O	O	O
Knowledge sharing is important	O	O	O	O	O
I want my superior to think I am a good employee	O	O	O	O	O

My organization management encourages informal activities and opportunities to communicate/share experiences and work knowledge. (ref: C)

O Strongly Agree

O Agree

O Do not know

O Disagree

O Strongly Disagree

There are formal activities such as training sessions, forums and meetings in the organization to share knowledge and experience. (ref: C)

O Strongly Agree

O Agree

O Do not know

O Disagree

O Strongly Disagree

In my organization, (ref: C)

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Lesson learned from failed projects are considered valuable.	O	O	O	O	O

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	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Lesson learned from successful projects are considered valuable.	O	O	O	O	O

There is a willingness in my organization that - (ref: C)

	Extremely likely	Moderately likely	Neither likely nor unlikely	Moderately unlikely	Extremely unlikely
Co-workers routinely share work experience with each other.	O	O	O	O	O
Activities associated with lessons learned are recognized publicly and/or rewarded by the management	O	O	O	O	O

Do you agree that staff, in your organization, do not have social activities after work hours. (ref: S)

- O Strongly Agree
- O Agree
- O Do not know
- O Disagree
- O Strongly Disagree

Do you agree that staff, in your organization, are eager to share work experience in the hallways or in casual gatherings. (ref: S)

- O Strongly Agree
- O Agree
- O Do not know
- O Disagree
- O Strongly Disagree

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From your view, what are the challenges in sharing knowledge with people from other sections of your company. (ref: S)

○ Don't perceive there is an urgent need

○ Lack of open-minded sharing environment

○ Lack of trust of others' knowledge

○ No proper technological platform to share

○ Do not know there is a knowledge needs

How motivated are you to share your knowledge and experience? (ref: S)

○ Very unmotivated because I keep my job secret to protect my job

○ Unmotivated because I do not care what is going on in the company

○ Motivated on average because I want to help my co-workers

○ Motivated because I think my co-workers need me

○ Very motivated because I think sharing mine will build a better company

Do you agree or disagree the following statements? (ref: S)

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I feel trustworthy with my co-workers' information	○	○	○	○	○
If I encounter problems in finishing my job, I know my co-workers will help me out when I ask	○	○	○	○	○
My co-workers are willing to help and do not deceive for their own profit	○	○	○	○	○

In your organization, documenting of work knowledge is a required part of your work practices. (ref: T)

○ Yes, it is a must

○ No, it is not

Mechanisms and tools to share work knowledge are widely available in my organization. (ref: T)

○ Yes, it is widely available
○ No, it is not

Do you use any of the following tools or methods to share or store knowledge, experiences or best practices within your company? (ref: T)

○ Colleague(s) (mentor/buddy/mentee)
○ Team meetings
○ Collaborative platform such as Google Doc, OneDrive, Drop Box
○ Social Media such as Facebook, Twitter
○ Other such as (write-in) [_____]

The biggest barrier for you to store information you received more efficiently and effectively is (ref: T)

○ Too busy, lack of time
○ Poor technology tools
○ Organization policy
○ Poor information system/process
○ I do not consider it is important

From a knowledge sharing point of views, what changes would you like to see in your company? (write-in) (ref: T)

[_____]

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Appendix E – Variables (Quantitative Research)

Variables

Variable Name	Description	Data Type	Measurement	Survey Question
V1: Consent	Respondent's university press total staff number	Numeric	Scale	1
Demographics				
V2: Region	Respondent's geographical location	Numeric	Scale	2
V3: Gender	Respondent's sex	Numeric	Scale	3
V4: Age	Respondent's age	Numeric	Scale	4
V5(a):LengthOrg	Number of years Respondent with the university press	String	Nominal	5(a)
V5(b):YearsExp	Respondent's age	Numeric	Ordinal	5(b)
V5(c):JobNature	Respondent's job nature	Numeric	Ordinal	5(c)
V6:Supervise	the number of staff - Respondent suprervises	Numeric	Scale	6
Knowledge Pactices - Behavior Section				
V7:SkillSource	Where to seek knowledge	Numeric	Scale	7
V8:InquiryFrequency	Frequency to seek knowledge	Numeric	Scale	8
V9(a):RefSource	Source of knowledge	Numeric	Scale	9
V9(b):RefSource_Txt	Write-In	String	Nominal	9
Q9(c)_Code	Coding for Question 9 Write-In	Numeric	Ordinal	9
V10 (a):KnowlegeProhibition	Knowledge Barriers	Numeric	Scale	10
V10(b):KnowProhText	Knowledge Barriers - Write-In	String	Nominal	10
V10(c):Q10_Code	Coding for Question 10 Write-In	Numeric	Ordinal	10
V11: UseDocumentation	Depend on documented procedures	Numeric	Scale	11
Knowledge Pactices - Culture Section				
V12(a):Culture1	I am an important part of my organization network	Numeric	Scale	12
V12(b):Culture2	share knowledge	Numeric	Scale	12
V12(c):Culture3	improve my organization daily operations	Numeric	Scale	12
V12(d):Culture4	Knowledge Sharing is important	Numeric	Scale	12
V12(e):Culture5	I want my superior to think I am a good employee	Numeric	Scale	12
V13:Culture6	My organization encourages informal activities to share knowledge	Numeric	Scale	13
V14:Culture7	Formal trainings and meetings available to share knowledge	Numeric	Scale	14
V15(a):Culture8	Lessons Learned from failure projects are considered variable	Numeric	Scale	15
V15(b):Culture9	Lessons Learned from failure projects are considered variable	Numeric	Scale	15
V16(a):Culture10	Co-workers routinely share work experience with each other	Numeric	Scale	15
V16(b):Culture11	Activities associated with lessons learned are recognized publicly and/ or rewarded	Numeric	Scale	15
Knowledge Pactices - Social Section				
V17:Social1	No social activities after work in my organizations	Numeric	Scale	17
V18:Social2	Staff are eager to share work experience in casual gatherings	Numeric	Scale	18
V19:SharingChallenge	Challenges in sharing kowledge with people from other sections of the organization	Numeric	Scale	19
V20:Motivation	Motivated to share knowledge	Numeric	Scale	20
V21(a):Social3	I feel trustworthy with my co-workers' information	Numeric	Scale	21
V21(b):Social4	Co-workers will help me out if I encounter problems at work	Numeric	Scale	21
V21(c):Social5	Co-workers are willing to help and do not deceive for their own profit	Numeric	Scale	21
Knowledge Pactices - Technology Section				
V22:RequiredDocumentation	Documentation of work knowledge is a required part of my work practices	Numeric	Scale	22
V23:TechToolsAvailability	The availability of knowledge curation mechanisms and tools in my organization	Numeric	Scale	23
V24(a):TechTools	Methods or Tools to curate knowledge	Numeric	Scale	24
V24(b):TechTools_Txt	Write-In	String	Nominal	24
V24(c):Q24_code	Coding for Question 24 Write-In	Numeric	Ordinal	24
V25:StoringBarrier	Kowledge Curation Barrier	Numeric	Scale	25
V26:Changes_Txt	Write-In: Changes would like to happen	String	Nominal	26
Q26_code	Coding for Question 26 Write-In	Numeric	Ordinal	26
Non-survey Variables				
TrustAvg	Average of Sub-scale	Numeric	Scale	
CultureAvg	Average of Sub-scale	Numeric	Scale	

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	17	16.0	16.0	16.0
	Female	88	83.0	83.0	99.1
	Prefer–not–to–specify	1	.9	.9	100.0
	Total	106	100.0	100.0	

		Gender		Total
		Male	Female	
How motivated are you to share your knowledge and experience? (ref: S)	Very unmotivated because I keep my job secret to protect my job	0	1	1
	Motivated on average because I want to help my co–workers	3	23	26
	Motivated because I think my co–workers need me	3	5	8
	Very motivated because I think sharing mine will build a better company	8	49	57
Total		14	78	92

		Gender		Total
		Male	Female	
The biggest barrier for your being able to store information you received more efficiently and ef...	Too busy, lack of time	9	38	47
	Poor technology tools	1	5	6
	Organization policy	0	5	5
	Poor information system/process	1	21	22
Total		11	69	80

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| | | Gender | | |
		Male	Female	Total
Mechanisms and tools to share work knowledge are widely available in my organization. (ref: T)	Yes, it is widely available	5	33	38
	No, it is not	8	44	52
Total		13	77	90

| | | Gender | | |
		Male	Female	Total
RefSourceFinal	In paper-based documents	1	2	3
	In our team/department's members' mind	4	21	25
	In our central information system	3	16	19
	On my personal or workstation computer/hard drive	1	8	9
Total		9	47	56

| | | Gender | | |
		Male	Female	Total
From your view, what are the challenges in sharing knowledge with people from other sections of your company. (ref: S)	Don't perceive there is an urgent need	2	21	23
	Lack of open-minded sharing environment	4	11	15
	Lack of trust of others' knowledge	0	8	8
	No proper technological platform to share	2	7	9
	Do not know there is a knowledge needs	4	28	32
Total		12	75	87

| | | Gender | | Total |
		Male	Female	
Knowledge Practices Section – How did you acquire the skills and expertise that you use in your job? (ref:B	from supervisors or co-workers in this organization	5	30	35
	through self-learning	6	31	37
	through formal training	1	6	7
	at my last job	4	17	21
	elsewhere	1	4	5
Total		17	88	105

	Gender	N	Mean	Std. Deviation	Std. Error Mean
How often do you need to ask information from your co-workers to perform your daily job	Male	17	3.82	1.468	.356
	Female	87	3.45	1.469	.157
I depend on documented procedures to do my work when I have questions in fulfilling my job tasks. (ref: B)	Male	14	2.64	.929	.248
	Female	81	2.89	1.084	.120
Do you agree that staff, in your organization, do not have social activities after work hours. (ref: S)	Male	14	3.57	1.016	.272
	Female	80	3.23	1.147	.128
Do you agree that staff, in your organization, are eager to share work experience in the hallways or in casual gatherings. (ref: S)	Male	14	2.36	.842	.225
	Female	80	2.01	.684	.077
TrustAvg	Male	13	4.1282	.39764	.11029
	Female	77	4.2078	.65570	.07472
CultureAvg	Male	14	3.2468	.49464	.13220
	Female	80	3.1159	.50914	.05692

OrgSize

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	small	55	51.9	51.9	51.9
	medium	33	31.1	31.1	83.0
	large	18	17.0	17.0	100.0
	Total	106	100.0	100.0	

Oneway

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
TrustAvg	small	49	4.2177	.69239	.09891	4.0188	4.4166	2.33	5.00
	medium	25	4.2133	.54331	.10866	3.9891	4.4376	3.33	5.00
	large	17	4.1569	.56664	.13743	3.8655	4.4482	3.33	5.00
	Total	91	4.2051	.62612	.06563	4.0747	4.3355	2.33	5.00
CultureAvg	small	51	2.9857	.51341	.07189	2.8413	3.1301	1.45	4.00
	medium	27	3.2795	.45589	.08774	3.0991	3.4598	2.45	4.27
	large	17	3.3209	.45695	.11083	3.0859	3.5558	2.73	4.55
	Total	95	3.1292	.50748	.05207	3.0258	3.2326	1.45	4.55

Test of Homogeneity of Variances

		Levene Statistic	df1	df2	Sig.
TrustAvg	Based on Mean	.599	2	88	.552
	Based on Median	.609	2	88	.546
	Based on Median and with adjusted df	.609	2	84.632	.546
	Based on trimmed mean	.537	2	88	.587
CultureAvg	Based on Mean	.135	2	92	.874
	Based on Median	.207	2	92	.813
	Based on Median and with adjusted df	.207	2	83.897	.813
	Based on trimmed mean	.168	2	92	.846

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
TrustAvg	Between Groups	.049	2	.025	.061	.941
	Within Groups	35.233	88	.400		
	Total	35.282	90			
CultureAvg	Between Groups	2.284	2	1.142	4.791	.010
	Within Groups	21.924	92	.238		
	Total	24.208	94			

Multiple Comparisons

Bonferroni

Dependent Variable	(I) OrgSize	(J) OrgSize	Mean Difference (I–J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
How often do you need to ask information from your co-workers to perform your daily job	small	medium	.136	.330	1.000	-.67	.94
		large	-.167	.406	1.000	-1.16	.82
	medium	small	-.136	.330	1.000	-.94	.67
		large	-.303	.437	1.000	-1.37	.76
	large	small	.167	.406	1.000	-.82	1.16
		medium	.303	.437	1.000	-.76	1.37
I depend on documented procedures to do my work when I have questions in fulfilling my job tasks. (ref: B)	small	medium	-.673*	.248	.024	-1.28	-.07
		large	-.152	.299	1.000	-.88	.58
	medium	small	.673*	.248	.024	.07	1.28
		large	.521	.331	.357	-.29	1.33
	large	small	.152	.299	1.000	-.58	.88
		medium	-.521	.331	.357	-1.33	.29
Do you agree that staff, in your organization, do not have social activities after work hours. (ref: S)	small	medium	.050	.269	1.000	-.61	.71
		large	-.294	.316	1.000	-1.07	.48
	medium	small	-.050	.269	1.000	-.71	.61
		large	-.344	.350	.983	-1.20	.51
	large	small	.294	.316	1.000	-.48	1.07
		medium	.344	.350	.983	-.51	1.20
Do you agree that staff, in your organization, are eager to share work experience in the hallways or in casual gatherings. (ref: S)	small	medium	-.017	.171	1.000	-.43	.40
		large	-.275	.201	.527	-.77	.22
	medium	small	.017	.171	1.000	-.40	.43
		large	-.257	.222	.752	-.80	.29
	large	small	.275	.201	.527	-.22	.77
		medium	.257	.222	.752	-.29	.80

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
How often do you need to ask information from your co-workers to perform your daily job	small	54	3.50	1.514	.206	3.09	3.91	1	5
	medium	33	3.36	1.454	.253	2.85	3.88	2	5
	large	18	3.67	1.495	.352	2.92	4.41	1	5
	Total	105	3.49	1.481	.145	3.20	3.77	1	5
I depend on documented procedures to do my work when I have questions in fulfilling my job tasks. (ref: B)	small	53	2.66	1.091	.150	2.36	2.96	1	5
	medium	27	3.33	1.000	.192	2.94	3.73	1	5
	large	16	2.81	.981	.245	2.29	3.34	1	4
	Total	96	2.88	1.078	.110	2.66	3.09	1	5
Do you agree that staff, in your organization, do not have social activities after work hours. (ref: S)	small	51	3.24	1.176	.165	2.90	3.57	1	5
	medium	27	3.19	1.145	.220	2.73	3.64	1	4
	large	17	3.53	.943	.229	3.04	4.01	1	4
	Total	95	3.27	1.125	.115	3.04	3.50	1	5
Do you agree that staff, in your organization, are eager to share work experience in the hallways or in casual gatherings. (ref: S)	small	51	2.02	.735	.103	1.81	2.23	1	4
	medium	27	2.04	.649	.125	1.78	2.29	1	4
	large	17	2.29	.772	.187	1.90	2.69	1	4
	Total	95	2.07	.718	.074	1.93	2.22	1	4

Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
How often do you need to ask information from your co-workers to perform your daily job	Above 18 and younger than 30	15	2.80	1.265	.327	2.10	3.50	1	5
	31 – 39	28	3.25	1.481	.280	2.68	3.82	1	5
	40 – 49	20	3.95	1.356	.303	3.32	4.58	2	5
	50 and above	42	3.67	1.541	.238	3.19	4.15	1	5
	Total	105	3.49	1.481	.145	3.20	3.77	1	5
I depend on documented procedures to do my work when I have questions in fulfilling my job tasks. (ref: B)	Above 18 and younger than 30	14	2.93	1.385	.370	2.13	3.73	1	5
	31 – 39	24	2.83	1.007	.206	2.41	3.26	1	4
	40 – 49	18	3.00	1.283	.302	2.36	3.64	1	5
	50 and above	40	2.83	.931	.147	2.53	3.12	1	5
	Total	96	2.88	1.078	.110	2.66	3.09	1	5
Do you agree that staff, in your organization, do not have social activities after work hours. (ref: S)	Above 18 and younger than 30	13	2.92	1.441	.400	2.05	3.79	1	5
	31 – 39	23	3.09	1.276	.266	2.54	3.64	1	5
	40 – 49	18	3.39	1.092	.257	2.85	3.93	1	4
	50 and above	41	3.44	.923	.144	3.15	3.73	1	5
	Total	95	3.27	1.125	.115	3.04	3.50	1	5
Do you agree that staff, in your organization, are eager to share work experience in the hallways or in casual gatherings. (ref: S)	Above 18 and younger than 30	13	2.08	.862	.239	1.56	2.60	1	4
	31 – 39	23	2.22	.736	.153	1.90	2.54	1	4
	40 – 49	18	2.17	.707	.167	1.82	2.52	1	4
	50 and above	41	1.95	.669	.104	1.74	2.16	1	4
	Total	95	2.07	.718	.074	1.93	2.22	1	4

Job Nature

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Non-Disclosed	2	1.9	1.9	1.9
	Administration	12	11.3	11.3	13.2
	Editorial	9	8.5	8.5	21.7
	Acquisition	28	26.4	26.4	48.1
	Design and Production	18	17.0	17.0	65.1
	Markeing and Sales	22	20.8	20.8	85.8
	Business Services	9	8.5	8.5	94.3
	Technical Services	6	5.7	5.7	100.0
	Total	106	100.0	100.0	

Appendix G - SPSS Codebook (Quantitative Research)

Variable Values

Value		Label
OrgSize	1	small
	2	medium
	3	large
Consent	1	I have read the above information. I agree to participate in this study.
	2	I do not want to participate
Region	1	North America
	2	South America
	3	Africa
	4	Europe
	5	Asia
	6	Others
Gender	1	Male
	2	Female
	3a	Prefer-not-to-specify
Age	1	Above 18 and younger than 30
	2	31 - 39
	3	40 - 49
	4	50 and above
YearsExp	1	less than one year
	2	one year and less than 5 years
	3	5 years and less than 10 years
	4	10 years and less than 15 years
	5	over 15 years
JobNature	0a	Non-Disclosed
	1	Administration
	2	Editorial
	3	Acquisition
	4	Design and Production
	5	Publishing
	6	Markeing and Sales
	7	Distribution
	8	Business Services
	9	Technical Services
Supervise	1	less than 10
	2	10 to 50
	3	51 to 100
	4	more than 100
	5	I do not supervise
SkillSource	1	from supervisors or co-workers in this organization
	2	through self-learning

	3 through formal training
	4 at my last job
	5 elsewhere
InquiryFrequency	1 Never
	2 Occasionally
	3 Once a week
	4 Once a month
	5 Daily
RefSource	1 In paper-based documents
	2 In our team/department's members' mind
	3 In our central information system
	4 On my personal or workstation computer/hard drive
	5 Other (write-in)
KnowlegeProhibition	1 Time limitation
	2 No support to share
	3 No motivation to share
	4 No right tools available
	5 Other (write-in)
UseDocumentation	1 Strongly agree
	2 Agree
	3 Neither agree nor disagree
	4 Disagree
	5 Strongly disagree
Culture1	1 Strongly Disagree
	2 Disagree
	3 Neither Agree nor Disagree
	4 Agree
	5 Strongly Agree
Culture2	1 Strongly Disagree
	2 Disagree
	3 Neither Agree nor Disagree
	4 Agree
	5 Strongly Agree
Culture3	1 Strongly Disagree
	2 Disagree
	3 Neither Agree nor Disagree
	4 Agree
	5 Strongly Agree
Culture4	1 Strongly Disagree

	2	Disagree
	3	Neither Agree nor Disagree
	4	Agree
	5	Strongly Agree
Culture5	1	Strongly Disagree
	2	Disagree
	3	Neither Agree nor Disagree
	4	Agree
	5	Strongly Agree
Culture6	1	Strongly Agree
	2	Agree
	3	Do not know
	4	Disagree
	5	Strongly Disagree
Culture7	1	Strongly Agree
	2	Agree
	3	Do not know
	4	Disagree
	5	Strongly Disagree
Culture8	1	Strongly Agree
	2	Agree
	3	Neither agree nor disagree
	4	Disagree
	5	Strongly disagree
Culture9	1	Strongly Agree
	2	Agree
	3	Neither agree nor disagree
	4	Disagree
	5	Strongly disagree
Culture10	1	Extremely likely
	2	Moderately likely
	3	Neither likely nor unlikely
	4	Moderately unlikely
	5	Extremely unlikely
Culture11	1	Extremely likely
	2	Moderately likely
	3	Neither likely nor unlikely
	4	Moderately unlikely
	5	Extremely unlikely
Social1	1	Strongly Agree
	2	Agree
	3	Do not know

	4	Disagree
	5	Strongly Disagree
Social2	1	Strongly Agree
	2	Agree
	3	Do not know
	4	Disagree
	5	Strongly Disagree
SharingChallenge	1	Don't perceive there is an urgent need
	2	Lack of open-minded sharing environment
	3	Lack of trust of others' knowledge
	4	No proper technological platform to share
	5	Do not know there is a knowledge needs
Motivation	1	Very unmotivated because I keep my job secret to protect my job
	2	Unmotivated because I do not care what is going on in the company
	3	Motivated on average because I want to help my co-workers
	4	Motivated because I think my co-workers need me
	5	Very motivated because I think sharing mine will build a better company
Social3	1	Strongly Disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree
	5	Strongly agree
Social4	1	Strongly Disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree
	5	Strongly agree
Social5	1	Strongly Disagree
	2	Disagree
	3	Neither agree nor disagree
	4	Agree
	5	Strongly agree
RequiredDocument ation	1	Yes, it is a must
	2	No, it is not
TechToolsAvailabil ity	1	Yes, it is widely available
	2	No, it is not
TechTools	1	Colleague(s) (mentor/buddy/mentee)
	2	Team meetings
	3	Collaborative platform such as Google Doc, OneDrive, Drop Box

	4	Social Media such as Facebook, Twitter
	5	Other such as (write-in)
Q24_code	1	No prohibitions
	2	Lack of Training or Knowledge
	3	Too busy
	4	Co-works are unavailable
	5	Depends on Situations
	6	Do not know
	7	Difficult to assess remotely
	8	No culture of knowledge transferred across silos
	9	All of the Above
	10	very rare occurence
	11	difficult coworkers who hoard knowledge in order to stay in power
	12	they don't really know how to do my job as I'm the only person who knows
StoringBarrier	1	Too busy, lack of time
	2	Poor technology tools
	3	Organization policy
	4	Poor information system/process
	5	I do not consider it is important
KnowProhFinalText	1	Time limitation
	2	No support to share
	3	No motivation to share
	4	No right tools availabile
	99.0	Missing or Other
KnowProhFinal	1	Time limitation
	2	No support to share
	3	No motivation to share
	4	No right tools availabile
	99	Missing or Other
RefSourceFinal	1	In paper-based documents
	2	In our team/department's members' mind
	3	In our central information system
	4	On my personal or workstation computer/hard drive

Appendix H – QDA Miner Codebook (Qualitative Research)

SECTIONS
- Interviewer
- Interviewee Responses

Organization Profiles
- Empoyee Size
- Location
- Organization Culture
- Volumes of Publishing
- Organization Reporting Structure
- Sales
- Publishing Subject Focus
- Current Situation
- Internship Program
- Uniqueness

Barriers to Knowledge Sharing
- Busy or Feel Overwhelmed
- Unfit Culture
- Staff Leaving
- Geographical Proximity
- Not understand the meaning of Knowledge Management
- False assumption that co-workers already knew
- People Uncomfortable to Changes
- people reluctant to change
- Technology
- Job Security
- No Knowledge Management Procedure in place
- Unsure about Knowledge Sharing Definition
- Organization Culture Adaptation due to Mergers

facilitators to knowledge sharing
- Empowering employees
- Encouragement from Management
- Office Layout
- Flat Organization Structure
- Open Culture
- Shared Computer Drives
- Trust Others
- **Tools**
  - **Implicit Knowledg - Documents**
    - Shared Drive or Server or Central Platform
    - Databases
    - Internal Newsletters
    - Professional Literature
    - One to One Email Exchange
    - Working Notes
  - **Implicit Knowledge - Social Media**
    - Twitter
    - Facebook
    - Listserv
  - **Tactic Knowledge from**
    - Rely on Co-workers
    - Self Previous Experience
    - Training
    - Communication in office area
    - New Staff Orientation
  - **Implicit Knowledge - Web-based Collaborative Plaforms**
    - Google Suite
    - Intranet
    - Wiki
    - SharePoint
- **Meeting Type**
  - Behavior in Sharing Knowledge
  - Staff Participation
  - Attending National Conferences
  - **Internal Meetings**
    - Retreats
    - Meetings in the form of Email Exchange

- Drop-In internal meetings
- Meetings with all internal departments
- Department Meetings
- Internal Task Force
- Brown Bag Workshop
- Serve on Committees
- **External Meetings**
  - Directors' Meetings
  - Meetings with Non-Presses
  - Meetings with Other Peers
- **Conferences**
  - Attending AUP annual conference
  - Attending other related conferences
- The Assocation of University Press
- Mentors across departments

Incidents
- **Positive stories**
  - External Consultant
  - Collaboration
  - The Use of Pervious Experience to New Job
  - External Request from University Faculty
  - Conduct Research on End Users
  - New Technology Implementation
- **Negative stories**
  - Geographic Proximities
  - Staff Issues
  - Technology issues

Behavior
- Constant Training on Technology by Management
- Communicate in staff office
- External Consultation Services
- Formal Advice from Management to Staff
- Internal Office Tour
- Knowledge Transfer (Peer to Peer)
- Rely on Association Of University Press
- Self Seeking Knowledge Initiatives
- Training via Co-workers
- **Positive Attitude**
  - Risking Take
  - Open mind
- Communication to remote offices

Social Norm
- Collegiality
- Closely knitted
- Run Internship program

Best Practices/Points
- Trust between Departments

Motivation to Share
- **Extrinsic Motivation**
  - Financial Rewards
  - Steer clear of punishment
  - Peer Pressure
  - Recognition
  - Open Culture to Share
  - a Shared Mission
- **Intrinsic Motivation**
  - Enjoying Helping
  - Self-Efficacy
  - Self Esteem
  - Sense of Achievement

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Appendix I – List of Diagrams

Diagram 1 - Saunders et al.'s Research Onion

Layer 1: Philosophical Stances: positivism, interpretivism, objectivism, constructivism, pragmatism

Layer 2: Approaches: Deductive, Inductive

Layer 3: Strategies: Survey, Case Study, Interview, focus group

Layer 4: Choices: multi-methods, mixed methods, mono method

Layer 5: Time Horizons: longitudinal, cross-sectional

Layer 6: Techniques & Procedures: data collection and analysis

Diagram 2 - Dervin's Sense-Making Theory

CONTEXT
- power structures/dynamics
- domain knowledge system
- Cultures/communities

OUTCOMES IN SITUATIONS
- helps/facilitations
- hurts/hindrances
- Consequences/impacts/effects

BRIDGES
- ideas/cognitions/thoughts
- attitudes/beliefs/values
- feelings/emotions/intuitions
- Memories/stories/narratives

SITUATION
- history
- experience
- horizons
- constraints
- barriers
- habits/skills

SENSE MAKING &
UN-MAKING
- Verging
- Procedures
- Strategies/tactics

RELEVANCES
- Criteria/attributes used to
  evaluate how served or
  impeded movement

GAPS
- questions/confusions
- muddles/riddles
- angst

SOURCES
- channels
- people
- media
- institutions

Diagram 3 - Ackoff's DIKW model

Wisdom

Knowledge

Information

Data

Diagram 4 - Clark's 2004 and Liew's 2013 models

Clarke's 2004 model
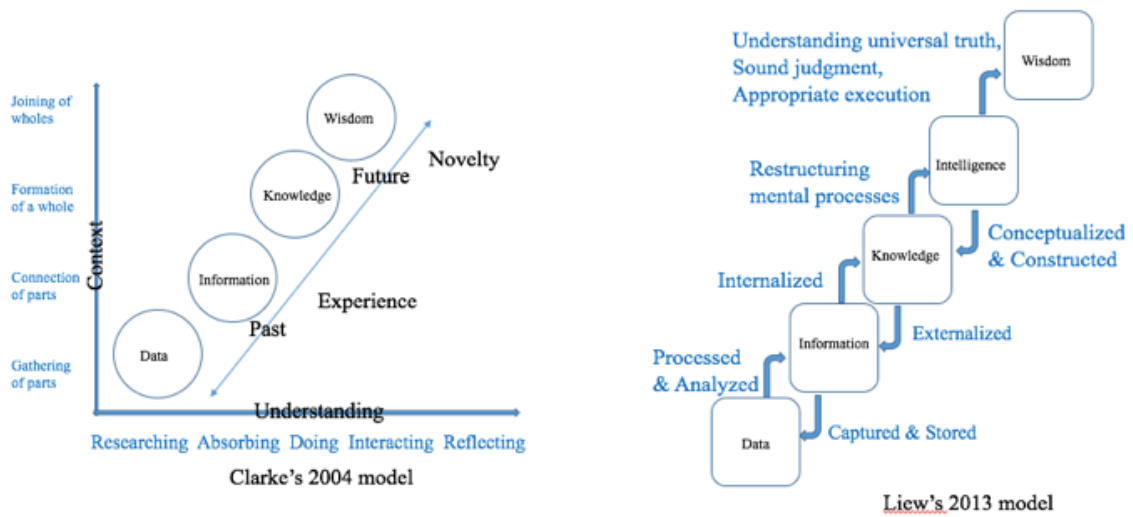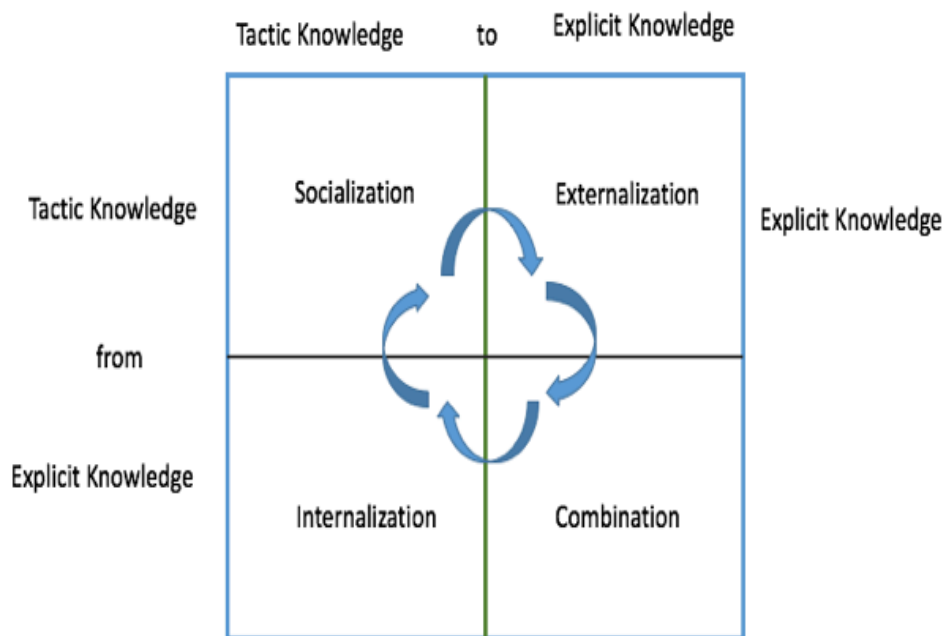
Liew's 2013 model

Diagram 5 - Nonaka and Takeuchi's SECI model

Appendix J – Summary of Interviews

The following provides a background summary of each interview. In general, each university press reported to their host university as a single entity, except two outliers were identified in terms of reporting structure. The university press of Interview #1 (a small organization size) maintains a consortium press status with the state-supported colleges in its local area and the university press of Interview #8 (a large organization size) is part of the publishing division of its University Library.

For Interview #1, the interview was conducted using an online meeting platform. The subject was a female director of a small size (as per the employee size category defined by the researcher for this project) university press in East South Central region of the United States. They published around 50 to 60 titles per year. This university press had 18 full-time employees and one half-time employee. The press also had an internship program that partners with the university. Besides the host university that the press is affiliated with, this press also had consortium press status with seven state-supported colleges, five private colleges in the state, and included the state's two major historical societies. At the moment, the interview was conducted, this university press had a couple of acquisition staff leaving and a new director had just come onboard.

For Interview #2, the interview was conducted using an online meeting platform. The subject was a male director of a small size (as per the employee size category defined by the researcher for this project) university press in East North Central region in the United States. The press publishes around 50 titles per year. The press expected that newly-hired staff would already have worked in the field or at least had some sort of experience in the scholarly publishing environment.

For Interview #3, the interview was conducted face to face in the subject's office. The subject was a female director of a large size (as per the employee size category defined by the researcher for this project) university press in South Atlantic North Central region in the United States. She had assumed this director position recently and so her answers were about her observations on her current job and the previous job in general. This press provides an aggregated journal database and publishes around 140 books per year in the areas of humanities, life sciences, health policy, public policy and regional titles.

For Interview #4, the interview was conducted by phone. The subject was a male director of a small size (as per the employee size category defined by the researcher for this project) university press in the Mid-Atlantic region of the United States. The press publishes between 70 and 80 books per year, mainly in the humanities and social sciences, philosophy, literary theory, history, cultural studies, critical race theory, gender studies, history, and urban studies. They have both print and digital books.

For Interview #5, the interview was conducted by phone. The subject was a male director of a large size (as per the employee size category defined by the researcher for this project) university press in the Mid-Atlantic region of the United States. The press publishes 120 books and 60 scholarly journals per year. They are one of the larger American university presses, with 125 staff members. This press' revenues come more from journals than from books.

For Interview #6, the interview was conducted by phone. The subject was a male director of a small size (as per the employee size category defined by the researcher for this project) university press in the East North Central area of the United States. They had nine full-time staff, two part-time staff, and a number of students. The press publishes biographies for

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young readers, the Cambridge Center of African Studies Series, The Civil War in the Great Interior, and a series in Appalachian Studies.

For Interview #7, the interview was conducted face to face at the interviewee's location. The subject was a male director of a small size (as per the employee size category defined by the researcher for this project) university press in the East South Central United States. The press has nine employees. In an average year, this press publishes around 30 to 35 new projects, and some re-prints and paperbacks.

For Interview #8, the interview was conducted by phone. The subject was a male director of a medium size (as per the employee size category defined by the researcher for this project) university press in the East North Central region of the United States. The press publishes 100 books a year. It has revenue of above $3 million a year. The press' special subject areas are political science, performing arts, classical studies, the history and culture of the Midwest, English language teaching, and American studies, including subjects such as disability studies. The press is part of the publishing division of the university library. The director of this press also supervises the university's publishing division, which publishes works such as journals, white papers and technical reports, and manages the university's institutional repository.

VITA

Judy Li started her Ph.D. program in Information Sciences at the University of Tennessee in Fall 2014. Being the eldest child, and her father was the only breadwinner to feed eight mouths in the house, she had to work full time for the family after her high school graduation. She started her college life after her kid brother received his Bachelor's degree, and then supported the family. Therefore, she was a late bloomer in college life.

Judy supported herself through multiple college degrees throughout her adult life but had never thought of the possibility of getting a doctorate. Her previous academic work included a Bachelor's in Business Administration from Ottawa University in Kansas, USA; a Master's in Library and Information Science from the University of Western Ontario in London, Ontario, Canada, as well as a Master's in Business Administration, with a concentration in Entrepreneurship, from Nova Southeastern University in Florida, USA.

Besides having these credentials, Judy has had decades of reference and teaching field experience. She has been working with a variety of patrons (college students of various age groups both on and off campus, faculty, researchers and small business owners), as a librarian: in special libraries (with Hong Kong Telecommunication Limited in Hong Kong) in the telecommunication industry; for the Canadian Federal Government - Office of the Superintendent of Financial Institutes (Toronto Research Center) in the finance industry; for Broward County Library System (Business, Law, Government Special Section) in the USA. She also worked in academic libraries (including the Chinese University of Hong Kong, Nova Southeastern University and Mississippi State University) in the USA, Canada and Hong Kong (British Commonwealth). At the time of this writing, she works full time as a tenured faculty, Associate Professor and Business Librarian, with the University of Tennessee's Hodges Library.

Judy has been active in her professional communities by serving on the Editorial Board

of the *Journal of Library and Information Services in Distance Learning,* and by serving on the

Advisory Board of the Business and Finance Division of the Special Library Association. She is

also a longtime scholarly reviewer with *Choice* (the publishing branch of the Association of

College and Research Libraries, a division of the American Library Association).

In the past, Judy obtained several solo-authorship grants such as a financial literacy

program grant from the University of Tennessee Alliance of Women Philanthropists in 2014, a

business research information needs research grant from University of Tennessee Library

Faculty Research Incentive Program in 2012, and a financial literacy credit course teaching grant

from Mississippi State University's Teaching and Learning Center in 2010.

As a scholar, she was honored in four consecutive years at the Annual Bibliography of

Business and Finance Division's Authors Honoring Event at the Special Library Association, an

international library professional association, annual conferences**:** 2010-2011, 2011-2012, 2012-

2013 and 2013-2014.

In fact, among her referred publications and presentations, one of her scholarly peer-

reviewed articles received an international award from a publisher in Europe – the 2015 *Emerald*

Citation of Excellence award for her solo-authorship article "Serving as an Educator: A Southern

Case in Embedded Librarianship." Receiving this *Citation of Excellence* represents one of the

highest accolades that an author can achieve, as each year Emerald recognizes only the 50 most

cited articles among the approximately 15,000 articles published by the top 300 management

journals in the world.