How Business Process Management, Knowledge Management, and Standardization Affect the Morale and Productivity of Employees in a University of Alberta Faculty: A Case Study

by

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Disclaimers

The views, findings, interpretations, and recommendations derived from this exploratory research project are those of the Principal Investigator, Michelle Zolner.

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Abstract

Business Process Management and Knowledge Management are frameworks within an organization that assist the flow of operations. While the overall business process and knowledge management are usually identified and documented within an organization, it is often the day-to-day processes and procedures that may be excluded or overlooked within the departments of an organization.

Standardizations and procedure reside within business processes. These provide structure and efficiency within an organization in regards to time management and completion of duties. Organizations that lack procedures or have poorly documented procedures or standardizations may impact employee work productivity and morale. If employees spend the majority of their time searching for ways to complete tasks when there is no identifiable procedure or must create a procedure to complete the task, it could affect productivity and morale.

In order to remain innovative and continue refining processes, organizations need to harness, retain, and develop their knowledge within the organization. This knowledge needs to be managed effectively in order to complement organizational Business Process Management, standardization, and procedure.

Keywords:
Business process management, knowledge management, standardization, procedure, time, productivity, morale

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I. Introduction

Business Process Management (BPM) and Knowledge Management (KM) are becoming more important in today's multifaceted organizations. Organizations strive to be successful and compete in the marketplace, while knowledge is increasing its value in intellectual capital. The boundaries of Business Process Management and Knowledge Management tend to crisscross in the day-to-day duties and responsibilities of employees within an organization.

What is the process? This question is becoming more ubiquitous in organizations all over the world. In your organization, if you were asked to describe a process, would you be able to describe it and know where to access the process information? Could you sketch the process to visually communicate it to another co-worker? These are the types of questions that are becoming prominent in the workplace.

In order to understand the depth and breadth of Business Process Management and Knowledge Management, a solid review of concepts and terminology is necessary. In organizations, semantics is a key aspect in communication for business processes and knowledge management. Fleischmann, Schmidt, Stary, Obermeier, and Börger (2012) note that "[a]ctive language [and also business terminology within an organization] lays the ground for all the capability of people to interact, and ultimately for their coexistence in all systems of society" (p. 15). Business Process Management and Knowledge Management usually include illustrative representations to describe or complement textual descriptions. These will be included where appropriate.

A. Concepts and Definitions

1. Knowledge Management

Knowledge is a vital component within organizations, and "presents a significant business opportunity" (Serban & Luan, 2002, p. 5). Knowledge is also perceived as having value in corporate assets (Davenport & Prusak, 2000; Blair, 2002; Baskerville & Dulipovici, 2006; Ungan, 2006), intellectual capital (Jashapara, 2005; Baskerville & Dulipovici, 2006; Lai & Talyor, 2012), and business intelligence (Huber, 1991; Cody, Kreulen, Krishna, & Spangler, 2002). Knowledge Management systems "[do] not try to actively supplement or replace human expertise, [they] simply [try] to encourage and facilitate it" (Blair, p. 1023). Knowledge Management can be split into two areas, concepts and technology, similar to Business Process Management. The main focus in this research study will be on concepts more so than the technology systems available; however, technology is incorporated within the discussion. The next section summarizes concepts and definitions within Knowledge Management. To provide an overview of the complexities, concepts, processes, and technological aspects involved, Figure 1 provides an illustrative overview of Knowledge Management.

Figure 1: Jashapara's (2005) KM Cycle (adapted from Figure 1.1: An integrative framework of knowledge management, Jashapara, 2005, p. 141)

i. Knowledge

What is knowledge? Knowledge has meaning and context; while information can be in the form of data and facts, which has a purpose (Nonaka, 1994; Cook & Brown, 1999; Davenport & Prusak, 2000; Blair, 2002; Baskerville & Dulipovici, 2006). Davenport and Prusak provide a relevant definition of knowledge as it pertains to Business Process Management and Knowledge Management.

> Knowledge is a fluid mix of framed experience, values, contextual information, and expert insight that provides a framework for evaluating and incorporating new experiences and information. It originates and is applied in the minds of knowers. In organizations, it often becomes embedded not only in documents or repositories but also in organizational routines, processes, practices, and norms (Davenport & Prusak, p. 5).

For the purposes of this introduction, five types of knowledge will be explained as they relate to Knowledge Management and Business Process Management. These types include: explicit, tacit, creation, organizational and forgotten memory.

ii. Explicit and Tacit

Explicit and tacit knowledge appear to be universal categories of knowledge discussed in the field of Knowledge Management. Explicit knowledge is documented, while tacit knowledge is knowledge gained through experience (Nonaka, 1994; Cook & Brown, 1999; Joia, 1999, 2000; Blair, 2002; Serban & Luan, 2002; Jashapara, 2005; Baskerville & Dulipovici, 2006; Ungan,

2006). Joia (1999; 2000) demonstrates his understanding of the difference between information and explicit and tacit knowledge by using a mathematical formula.

INFORMATION = DATA + ∑ (attributes, relevance, context)

KNOWLEDGE = INFORMATION + ∑ (experience, values, patterns implicit rules)

(Joia, 1999, p.141)

Explicit and tacit knowledge, specifically in an organizational context, are the backbones for the operational and strategic functions of the organization. Table 1 illustrates Serban and Luan's main elements of explicit and tacit knowledge.

	Explicit Knowledge (Documented)	**Tacit Knowledge (Know-how embedded in people)**
Features	Easily codified Storable Transferable Easily expressed and shared	Personal Context-specific Difficult to formalize Difficult to capture, communicate, share
Sources	Manuals Policies and procedures Databases and reports [Websites and Intranets]	Informal business process and communications Personal [and organizational] experiences Historical understanding [Observing]

Table 1: Explicit and Tacit Knowledge (adapted from Serban & Luan, 2002, p. 10)

iii. Creation of Knowledge

Creation of knowledge is the bridge between explicit and tacit types of knowledge. The creation of new knowledge allows innovation to occur within organizations, which along with

Business Process Management fosters the organizational culture. Table 2 shows how Nonaka (1994) describes knowledge creation and transfer through tacit and explicit knowledge.

	Tacit Knowledge	**to**	**Explicit Knowledge**
Tacit Knowledge From	Socialization [face-to-face, telephone, email, watching videos, observation, meetings]		Externalization [use of metaphors]
Explicit Knowledge	Internalization [actions]		Combination [creating explicit from explicit]

Table 2: Knowledge Creation – Tacit to Explicit Knowledge and Explicit to Tacit Knowledge (adapted from Nonaka (1994), Figure 1: Modes of the Knowledge Creation, p. 19)

Employees in an organization, consciously and unconsciously create new knowledge in their day-to-day activities; it is an endless loop (Nonaka, 1994; Baskerville & Dulipovici, 2006). Kransdorff (2009) provides a critique of modern knowledge creation and acquisition. He provides an alternative viewpoint, which emphasizes that "people have become so used to simply having data and information given to them that they have become unskilled at creating knowledge for themselves or their employers" (Kransdorff, p. 6). This may have some impacts on productivity and morale in the workplace, which will be discussed in later sections.

Within an organization, new knowledge and current knowledge exist side-by-side. The existing knowledge, the explicit documented knowledge, is also in the form of knowledge experts, organizational memory, and organizational forgotten memory. Organizations often have employees or consultants who are considered experts. Different types of technology systems can

be used for Knowledge Management; however, knowledge experts can "themselves become the 'repositories' for knowledge" (Blair, 2002, p. 1022). Transferring the tacit knowledge of experts to others in an organization can have challenges. Experts must be willing to share knowledge or have an organizational culture that promotes this between employees. Blair classifies this as "an interactive process, and often takes the form of a kind of apprenticeship with novices interacting closely with experts to 'learn their trade' [within the organization]" (p. 1022).

iv. Organizational Memory

Organizational memory is an integral component of knowledge; it is the "adhesive and its lubricant—that is, it relates to all the routines and processes (formal or otherwise) that make an organization tick" (Kransdorff, 2009, p. 7). Memory has multiple storage spaces. It can be retained in individual employees, in the organizational culture, routines and processes, organizational structures, workplace environment, employee networks, and therefore is valuable on many levels (Baskerville & Dulipovici, 2006; Kransdorff, 2009). Organizational memory can have an impact on decision-making and communication (Huber, 1991; Baskerville & Dulipovici). Baskerville and Dulipovici suggest that organizational memory can have some negative effects, such as interfering with organizational learning that limits decisions with incorrect information or mistakes not learned from past decisions, and biases from the status quo (p. 93).

v. Forgotten Memory

Forgotten memory is another key aspect of organizations. Kransdorff (2009) and Bowker (1997) differ on the meaning of forgotten knowledge within an organization. Kransdorff suggests that organizational memory can also be viewed from the perspective of "what is *not* forgotten"

(p. 7). Bowker, on the other hand, argues that some knowledge is intentionally or selectively forgotten in the process of producing or creating new knowledge. He classifies forgotten knowledge into two categories: clearance and erasure. “Clearance [is] the erection of a barrier in the past at a certain point so that no information or knowledge can leak through to the present; [while] erasure [is] the ongoing destruction of selective traces in the present” (Bowker, p. 114). Organizational memory is a complex area, and has its challenges; however, Bowker does agree with other authors on the importance of organization memory. Bowker suggests that “[d]esigners of information superhighways need to take the occasional stroll down memory lane” (p. 136). Organizational memory, whether right or wrong, is part of the organizational culture, and has a strong role in Knowledge Management and Business Process Management.

2. Business Process Management

Business Process Management has its roots in Business Process Reengineering (BPR) and statistical process control (Hammer, 2010, p. 3-4). Hammer was considered the first to coin the term Business Process Reengineering in the early 1990s (Talwar, 1993). Over the years, Business Process Reengineering has become more commonly known as Business Process Management. Business Process Management did bring two new areas into the field. The areas were “redefined definition of process: end-to-end work across an enterprise,” and “a focus on process design as opposed to process execution” (Hammer, p. 4). Organizations are continually changing and improving as part of the fluid process of maintenance and implementation feedback. Business Process Management, aside from being referred to as Business Process Reengineering, it is also known by the following terms: Business Process Improvement (BPI), Business Process Redesign, Core Process Redesign, and Process Improvement (PI).

i. Business Process Management

The majority of definitions for Business Process Management have similar elements; however, Fleischmann et al. (2012) seem to articulate them in an all-encompassing description as

> a set of interrelated activities (tasks), which are handled by active entities (people or systems performing work tasks) in a logical (with respect to business) and chronological sequence, and which use resources (material and information) to work on a business object for the purpose of satisfying a customer need (to thus contribute an added value), and which have a defined start and input, as well as a defined end state and result (p. 26).

McDonald (2010) brings in technology as part of his definition, "the series of events that bring together *people*, *technology*, and *information* in ways that create valuable outputs" (p. 5). This completes the circle of relating Knowledge Management and Business Process Management.

ii. Process

Defining a process, especially a business process, is a complex task (Hammer, 1990, 2007, 2010; Armistead, Harrison, & Rowlands, 1995; Harrison, 1998). For a detailed list of process definitions, types of processes, and elements of process refer to Appendices A, B, and C. These charts are useful for comparison of the early concepts of Business Process Reengineering to today's Business Process Management. The most common similarities between the process definitions are that processes have inputs, outputs, use resources, have value and a target market. Three main types of process: operational, management, and support seem to be prevalent along with differentiating core and non-core types (Davenport, Short, Young, & MIT Sloan School of

Management, 1990; Hammer, 1990; De Toro & McCabe, 1997; Pandya, Sega, & Carrie, 1997; Lehmann, 2012). Elements of business process are also similar in the overall concept of process. Rosemann and vom Brocke (2010), Fleischmann et al. (2012), and Hammer (2007) note the importance of governance in the system. Subject Business Process Management (S-BMP) is focused on the subject of processes, which creates meaning (creating knowledge), and uses the natural language as a core for reviewing and analyzing all elements: subject-predicate-object (Fleischmann et al., 2012).

iii. Organizational Memory and Business Process Management

Kransdorff (2009) in one of his descriptions of organizational memory, references the health field, comparing organizational memory to DNA (p. 7); however, this reference is also extremely applicable to Business Process Management. With Business Process Management, knowledge and processes are the underlying DNA coding of an organization – the design, implementation, execution, adaptation, creation, and modification, all facilitate how organizations function regardless whether there are formal or informal organizational structures in place.

iv. Technology and Business Process Management

Planning is an important part of Business Process Management (Talwar, 1993, p. 33). Depending which methodology and framework are selected for Business Process Management or Knowledge Management, technology may play a role. The use of technology has implications, such as: cost and user-friendly considerations, decisions surrounding creating a new system, revising the current system, purchasing a new system, or a decision not to use technology at all.

3. Productivity

Productivity has numerous definitions, methodologies, and frameworks. Van Wart and Berman (1999) define productivity through achieved outcomes with three elements: purpose; expectations that are a result of the level of efficiency and effectiveness in using the resources; and human capital (including human resources and organizational systems), which are supposed to be used efficiently and effectively (p. 329). These three elements are similar to Knowledge Management and Business Process Management, as they require value, processes, and continuous monitoring. Holzer (1995) and Kransdorff (2009) note the importance of productivity improvement. "The necessity for productivity improvement is a recurring theme … by heads of state, the media, international agencies, corporations engaged in international trade, economists and public administrators, and the public" (Holzer, p. 413). Kransdorff also emphasizes the value of productivity, which as a result of Knowledge Management and Business Process Management could have implications for success or failure of an organization.

> In bull-market times, productivity is often seen as less than compulsory, but when the bear rears its ugly head— as it is doing at the moment— productivity is indispensable. In fact, short of government intervention (subsidies, interest rate cuts, etc.), the *only* way for organizations to survive without too much pain is to improve their productivity (Kransdorff, p. 2).

Challenges of productivity will be discussed in the Literature Review section; however, these concepts underpinning productivity will provide a basic foundation for understanding the Business Process Management and Knowledge Management context within which this study is placed.

4. Morale

Morale can be generalized or tailored to specific themes. While definitions of morale can be specific for one discipline, they may be applicable to other areas as well. Hall (1918) describes morale as it relates to the Great War, Child (1941) and Roethlisberger (1959) both refer to individual and group morale, and Roethlisberger contrasts health to morale in organizations.

Morale, as described by Hall (1918), remains applicable ninety-five years later to morale issues today. Hall provides an overview of the definition of morale, and although it is described in the context of war and army issues, it is still relevant for organizations.

> No two conceptions of it are alike. It can no more be defined than energy, or life, or soul. All we can do is to try to describe, to feel, and to guide it. … When and where it is strongest it makes the individual feel "fit" for any task. It also gives him [or her] a sense of solidarity with his comrades [employees] seeking the same end, and enables him [or her] either to do or to suffer in a common cause. (Hall, p. 362).

Hall's definition also shows elements of Knowledge Management and Business Process Management, the importance of learning (knowledge and business processes), and practical insights (explicit and tacit knowledge, and business processes).

Child's (1941) three categories of morale: individual-organic emphasis, group emphasis, and emphasis on individual-within-the-group on any specific occasion, were developed at a 1940 conference by 10 psychologists. These three categories of morale focus on physical and emotional well-being (individual-organic), clear fixed group purposes or goals (group emphasis),

and all the factors affecting an individual's life (emphasis on the individual within the group), which hopefully enhance the effectiveness of the group (Child. p. 393-394).

Roethlisberger (1959) intertwines many aspects of morale to provide a direct, real-world, and raw approach. He links employees and their associations in the social system of an organization, and discusses some of the more sensitive areas for low morale, "diagnosing possible sources of interference, of locating sore spots, of liquidating human tensions and strains among individuals and groups, of helping people to orient themselves to their work groups, of spotting blockages in the channels of communication" (Roethlisberger, p. 192). Roethlisberger continuously refers to morale as human situations. He suggests that the term *morale* should be replaced with *human situations*, and asks the question 'What are the particular human situations in your department, and how are you [staff member who has the authority in the situation] handling them?' (Roethlisberger, p. 194).

B. Research Problem Statement

Faculties within a university can be classified as larger business units within an organizational context. A university has organizational standards, policies, procedures, Knowledge Management, and Business Process Management, which all faculties are required to implement and follow. At the faculty level, there is a certain degree of autonomy allowed to manage the faculty unit's own standards, policies, procedures, Knowledge Management, and Business Process Management. The goal of this research within the Faculty of Extension, at the University of Alberta, is to explore how Knowledge Management, Business Process Management, standardization, and day-to-day overlooked or excluded procedures, may affect employee productivity and morale in the workplace.

C. Research Questions

An exploratory case study and textual analysis were selected as research methodologies to attempt to answer the following questions:

1. How knowledgeable are employees about business processes within their organization, and do they know where to find information pertaining to those processes?

2. How do current business processes affect productivity and morale?

3. Are there day-to-day activities (processes) that are overlooked or excluded from having some standards in procedure?

4. Would creating standard procedures and standardizations have an effect on productivity and morale?

D. Research Study Objectives

The study objectives were:

- To understand how important or unimportant a role of Knowledge Management and Business Process Management systems and standardized business processes might play within an organizational unit;

- To discover the range of knowledge employees possess about their own organization in terms of knowledge management and business processes;

- To discover if productivity and morale are affected by overlooked or excluded day-to-day business processes and knowledge management in an organization; and

- To understand how standardizing overlooked or excluded day-to-day business processes would affect employee productivity and morale;

E. Research Study Importance

Communication, an essential skill in business and organizations, is irrevocably embedded in Knowledge Management and Business Process Management. Studying various aspects of Knowledge Management and Business Process Management allows researchers and practitioners to learn from current systems, improve existing systems, and recommend improvements for implementation. Davenport et al. (1990) suggest that "[f]irst, problems must be understood so that they are not repeated. Second, accurate measurement can serve as a baseline for improvements" (p. 16).

Studying organizations at a business level, especially through empirical research, is becoming more valuable. Harter, Schmidt, and Hayes (2002) emphasize that it "provides opportunities to establish linkages to outcomes directly relevant to most businesses. Important outcomes such as customer loyalty [employees, researchers, and students in universities], profitability [revenue-generating faculties], [and] productivity, are typically aggregated and reported at the business-unit level" (p. 268).

Concepts may be considered ideal for Knowledge Management and Business Process Management implementation; however, without actual testing, this premature action may lead to

challenges. In the field of study for Business Process Management and Knowledge Management, there is an abundance of theoretical grounding, models, frameworks, and technology systems; however, there is a lack of empirical research, in particular for follow-up of implementation especially post-implementation of new models or systems. At the business unit level, empirical research can be gathered, and compared to other units, thus providing research for analysis and discussion for the selected theory or framework. Implications for using business unit research could be used as frameworks, models, and implementation methods for other business units.

Having standardizations and procedures, formal and informal, may help employees complete their tasks and fulfill responsibilities. McDonald (2010) stresses the importance, value, and necessity of having a *process mindset* within an organization (p. 8). Asking an employee to think about processes while he or she is working, may provide valuable data for Knowledge Management and Business Process Management research. Going to the source of the issue or problem (if allowed) may help organizations as a whole in the future. Harter et al. (2002) also suggest that going to the heart of the matter of what is important for employees will provide an understanding and overall satisfaction at the business unit level (p. 276).

Communication is an important part of productivity and morale in an organization. Roethlisberger (1959) connects Knowledge Management and Business Process Management through communication, vertical and horizontal integration, productivity (intellectual and economic capital), management levels, and the organization as whole. Roethlisberger suggests communication should be clear, that horizontal and vertical communication be transmitted correctly, and that any movement or up or down the corporate ladder, should be in accordance with social values within the human situation and retain employee morale (p. 192-193). Other

areas such as crossing boundaries, areas of responsibility, and turfs between departments can also be implied from Roethlisberger's comments as being important communication areas regarding productivity and morale.

The value of Knowledge Management and Business Process Management holistically, is that knowledge and processes are invaluable to organizations on numerous levels, and can offer employees information and knowledge for addressing future problems, successes, failures, and efficiencies. Knowledge provides another set of standards of practice and procedure, which Davenport and Prusak (2000) call, "rules of thumb" (p. 11). More empirical research would further strengthen this field of study, and this exploratory research at the faculty (business) level may be able to contribute knowledge, business process, morale, and productivity empirical research.

II. Literature Review

Knowledge Management and Business Process Management are two vast areas of study, therefore this review of the literature will by necessity focus only on the major studies relevant to the current research. The structure for the Literature Review will be theme based: Knowledge Management will be reviewed in the first section and Business Process Management in the latter part. There are overlapping findings between the topics of Knowledge Management and Business Process Management, which will be discussed primarily in the main topic areas, and dispersed appropriately in each section. Figure 2 displays the overlapping studies within each main section in Knowledge Management and Business Process Management.

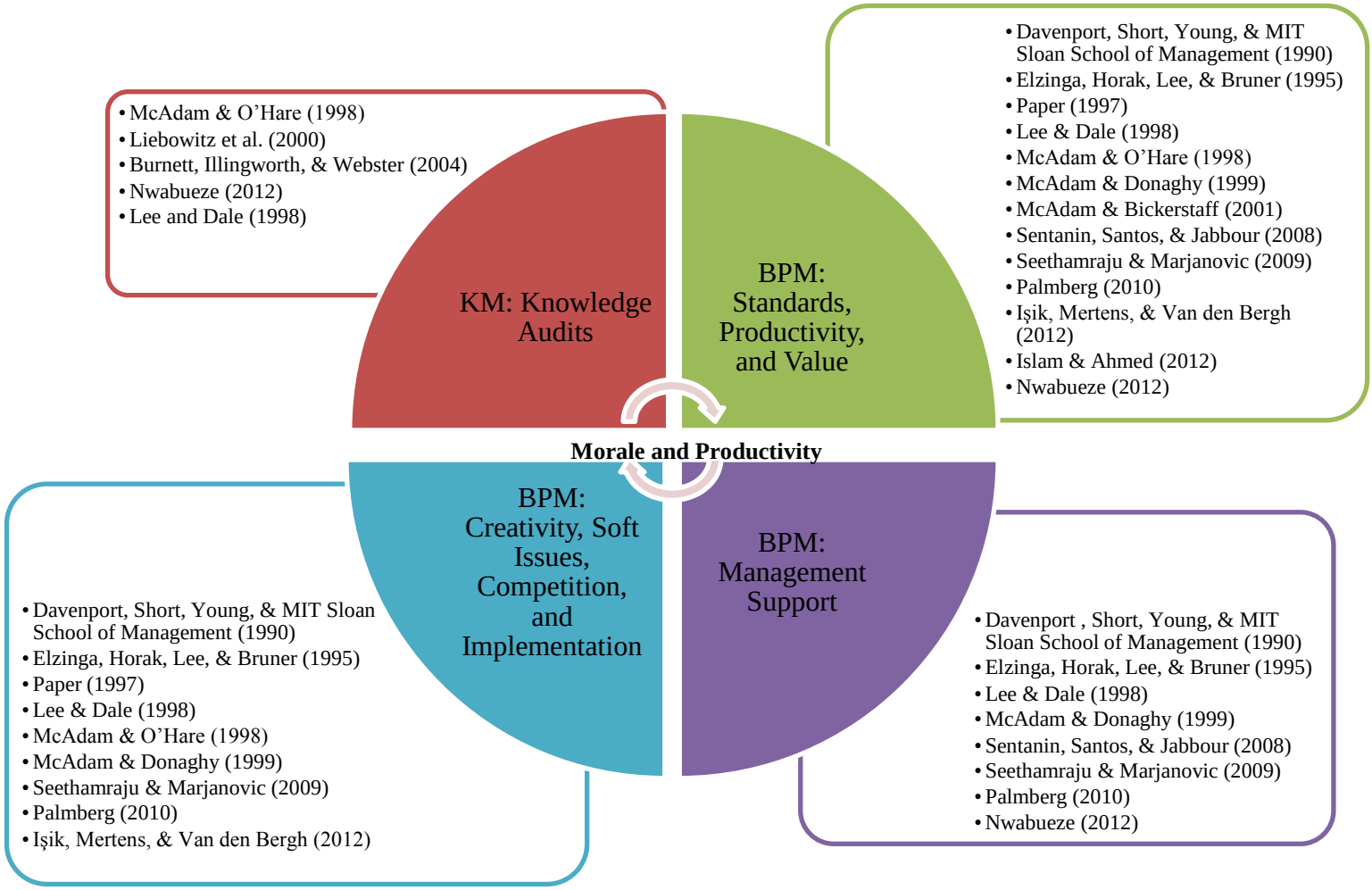

Figure 2: Overlapping Research Studies in Knowledge Management and Business Process Management

A. Knowledge Management

Knowledge is the underlying adhesive building block for Business Process Management. Liebowitz et al. (2000) suggest knowledge audits relate directly to Business Process Management: "[i]t [the findings of the knowledge audit] can be used as the basis for evaluating the extent to which change [or modification] needs to be introduced to the organization" (p. 3). Business Process Management, as discussed in the Introduction section, ultimately defines processes, analyzes, documents, and implements recommendations (small to entire redesign),

which requires knowledge of process in some capacity. Several key themes were found to be consistent throughout the literature: knowledge audit, explicit or tacit knowledge.

B. Knowledge Audit

A knowledge audit is one method used to investigate the Knowledge Management process. It arguably can be one of the most vital methods in Knowledge Management and is the primary data gathering method in four case studies: a chemical industry, Du Pont (McAdam & O'Hare, 1998); a small behaviour health care organization, ReVisions (Liebowitz et al., 2000); a tax department in a large oil company (Burnett, Illingworth, & Webster, 2004); and a drug company, Bournemouth – name provided for the study, as real name was bound in a confidential agreement (Nwabueze, 2012). These four separate case studies with diverse organizations over a period of fourteen years had similar findings and recommendations after using knowledge audits: employee and morale issues, productivity and efficiency concerns, and information gaps regarding employees knowing where knowledge was located.

Identifying that a knowledge audit was required was recognized in all four studies as important for their organizations. The term, knowledge audit, was used by Liebowitz et al. (2000) and Burnett et al. (2004), while McAdam and O'Hare (1998) used self-assessment and external audit, and Nwabueze (2012) used yet another term, self-analysis/internal audit. McAdam and O'Hare and Nwabueze used the knowledge audit as part of a process with their Business Process Management analysis.

Nwabueze's (2012) study used strong imagery in depicting the state of the drug company organization before and after the audit. Bournemouth assumed that their organization was

running smoothly, and that employee morale and productivity was satisfactory. However, it was quite the opposite, "it had a mini crisis at hand: the factory had become a headless chicken with highly de-motivated employees running around doing their best without any set direction or purpose" (Nwabueze, p. 580). A study by Lee and Dale (1998) had similar issues in a business unit within a corporate organization. Although there was evidence of business process improvement, "there [was] little evidence that it [was] sufficiently directed and [was] being successfully co-ordinated so that everyone [was] pulling in the same direction" (p. 222). The study also showed that process owners were identified; however, documentation of processes varied between fully documented to not at all.

Productivity, in all cases reviewed for this Literature Review, was improved after the findings of the knowledge audit and/or recommendations for Business Process Management. One of Nwabueze's (2012) recommendations for proceeding with Business Process Management was "not [to] proceed if structures, processes and systems are out of control" (p. 583). This could be applied to other organizations thinking of engaging in Business Process Management.

Poor employee morale, which seemed to affect productivity due in part to the frustration of not knowing where to find information, was found in each of the studies. Liebowitz et al. (2000) provided an important finding that could be related to other organizations experiencing frustration and low morale about knowing where to find information and communication issues. For example, "[a] common theme that surfaced was that communication between the departments is poor. This was seemingly attributed to both physical and procedural factors" (Liebowitz et al., p. 8).

Burnett et al. (2004) had more morale issues concerning "buy in" early on in their study from employees in participating and learning about knowledge audit processes. Another finding, which related to Burnett et al. and Liebowitz et al., was associated with employees not knowing where knowledge was available in their department. One of Burnett et al.'s respondents provided insights to these findings.

> I don't always know who to speak to or where to go for a specific piece of knowledge. So what then happens is that I talk to someone who then says go to talk to someone else then I go to somebody else who may or may not know. So I may have to go to five people before I get the right knowledge or information (Burnett et al., p. 31).

These findings describe explicit and tacit transfer of knowledge, and that some employees have more expertise than others about specific information.

C. Business Process Management

Business Process Management has grown exponentially since the early 1990s. Analysis of the literature revealed several strong overarching themes: standards, productivity, value, challenges, implementation, and management support. Other themes emerged and will be discussed throughout the main themes.

D. Standards, Productivity, and Value

There are many standards for having standards, no pun intended. There was prominent support in the literature that standards are an important factor in Business Process Management, and that they impact other areas in the organization. Standards can affect productivity (Elzinga, Horak, Lee, & Bruner, 1995; Seethamraju & Marjanovic, 2009; Palmberg, 2010; Nwabueze,

2012; Islam & Ahmed, 2012). Knowledge (explicit or tacit) was a significant aspect of standards, and some would argue creativity also plays a crucial role (Paper, 1997; Seethamraju & Marjanovic; Işik, Mertens & Van den Bergh, 2012). Soft issues (Elzinga et al.; Palmberg; McAdam & O'Hare, 1998; McAdam & Donaghy, 1999) and competition (Lee & Dale, 1998; McAdam & O'Hare) were also other significant factors associated with standards.

Empirical research in the area associated with standards and education systems, specifically, post-secondary university faculties from a business unit perspective analysis within an organization, appear to be sparse. Seethamraju and Marjanovic (2009), in a case study, researched a specific faculty within a large university. Their study focused on the e-procurement business process, an "initiative [that] started as part of a much larger initiative to standardize operational processes that, in turn, [was] expected to enable implementation of a concept of shared business services" (p. 929). McAdam and O'Hare (1998) had a similar focus, and added creating strategic and operational networks, which would help keep consistent (more standard) processes within their multi-site organization (p. 236).

Lack of consistency (no set standards, individuals creating their own processes) with e-procurement processes within faculties, was a key finding by Seethamraju and Marjanovic (2009), which related directly to Knowledge Management. In order to discover why there were different versions of process, Seethamraju and Marjanovic had to locate experts within the faculty who knew the background and sources of the processes, essentially, tapping into the organizational memory. Their research concluded that

> [u]nlike in a typical BP [business process] improvement methodology where modeling of the current (as-is) BP is followed by the design of improved (to-be) process, and carried out by the process analyst with varying degrees of end-user participation [knowledge of employees], this methodology values and incorporates the process knowledge possessed by various actors into the to-be process. By this approach, it will not-only ensure "buy-in" to the proposed process, but also facilitates standardization wherever beneficial to the organization (Seethamraju & Marjanovic, p. 931).

This finding further exemplified the interconnectivity of Knowledge Management and Business Process Management.

Palmberg's (2010) multiple case studies on three different Swedish organizations also had positive results for standardization. Organization C, a subsidiary of a larger Swedish insurance organization, had different market areas working in different ways before standards were implemented. One of the former process owners commented that a large gain of working with process management was "that a unified way of working at Organization C was developed, a way of working that was not dependant on which market area was looked at" (Palmberg, p. 106).

Another study in the educational field, specifically the further education sector in Northern Ireland, had different results for Business Process Management. McAdam and Bickerstaff (2001) found in their qualitative study of seventeen colleges (only thirteen were discussed, as the other four had no developments in the study area) that customer focus was a major theme. "Colleges now need to be much more customer focused and flexible, meeting the

individual needs of learners if they are to survive" (McAdam & Bickerstaff, p. 63). The focus on customers (internal and external) was similar to Seethamraju and Marjanovic (2009) in terms of addressing a process within a faculty that had an internal focus on process (employees), and external (customers and vendors) from the e-procurement process. McAdam and Bickerstaff noted that "BPR [Business Process Reengineering] focusing on the restructuring of the curriculum was considered to be a suitable vehicle to achieve these changes. These changes required the colleges to become more customer and business process focused" (McAdam & Bickerstaff, p. 63). With the studies from McAdam and Bickerstaff and Seethamraju and Marjanovic from different countries and educational institutions (United Kingdom [Northern Ireland] and Australian) and referencing terminology from the education and business industry, it appeared that the education sector could also benefit from Business Process Management.

Davenport et al.'s (1990) research from MIT, Harvard, and consulting organizations with nineteen different companies, which focused on the relationship between information technology and business process redesign, found that cost reduction on its own as a sole objective for process redesign, was not always effective. Rather, a combination of cost with other factors such as time reduction, quality of work life (QWL)/learning/empowerment were key to business process redesign for business vision and process objectives (Davenport et al., p. 14-15).

Three case studies: Nwabueze (2012), Palmberg (2010), and Paper (1997), in particular, had successful outcomes for productivity and cost reductions and efficiencies, as a result of the implementation of Business Process Management and standardization. Each study had a combination of factors, which suggested that the findings of Davenport et al. (1990) could be found in other empirical studies. In Nwabueze's study at Bournemouth

> [s]tructural changes as a result of re-engineering enable the company to reduce headcount by 14 per cent, increase output by 40 per cent, and service levels from 76 to 99 per cent. Cycle time dropped by 50 per cent, customer lead times by 50 per cent, purchasing costs by 30 per cent and reduced inventory loss by 50 per cent (p. 583).

In Palmberg's Organization C, standardization of work procedures made a direct impact on cost saving, and the goal of 25 per cent growth and 25 percent reduction in cost was reached four years after it was implemented (p. 106). Paper's (1997) five-year study of Caterpillar MEC, a manufacturer of small and medium-sized diesel engines, divided the business outcomes with implementation into quantifiable and non-quantifiable benefits. Caterpillar had similar results to Bournemouth (Nwabueze) and Organization C (Palmberg).

> Quantifiable benefits (average) included process cycle time (reduction of 50 per cent); process steps (reduction 45 per cent); process resources (people reduction 8 per cent); and business process cells (three new ones); non-quantifiable benefits included: improvement becoming [a] way of life; employees becoming business people; multi-million dollar bottom-line impact; accountability/responsibility pushed down; and employee involvement in decision making (Paper, p. 229).

These three studies showed that standards, productivity, and actual implementation can be successful, and that theoretical concepts in Business Process Management can have empirical results.

Elzinga et al. (1993) note that costs from the organizational side of implementation, which are often not focused on as much as the effects on operational cost as a result of Business

Process Management, should be separated for analysis (p. 123). In a credit card case study of a multinational bank in New Zealand by Islam and Ahmed (2012), recommendations were suggested for decreasing the time spent on processing credit card applications. However, in their study, there was no mention of the cost to the organization, such as how restructuring would impact jobs. The proposed to-be credit card process was more theoretically based. The proposed new process would decrease delivery time of processing credit card applications from eight or nine days to four days, increasing productivity and customer satisfaction (Islam & Ahmed, p. 298). This particular case study could be a candidate for implementation follow up to determine if it was successful or required further feedback.

Value, from an organizational and customer viewpoint, was another major theme in the literature. Organizations usually require customers to be successful as a business, not only for financial reasons, but also for their value in terms of image and branding in the business community. Ideally, businesses want to be recognized for their strong assets, for example, financial stability and customer loyalty. Value also has internal meaning within organizations. It can be measured in terms of financial gain or loss, but also through other factors such as: knowledge, standards and procedures, productivity, soft issues (or human issues such as state of mind, morale, motivation, stress, attitudes) culture, and technology.

Seethamraju and Marjanovic's (2009) study provided a positive example of value and the ripple effects of initiatives to standardize processes, which also showcased knowledge sharing, explicit and tacit knowledge, and productivity.

> From the business value perspective, this [e-procurement standard process] will enable different units to share assets [productivity affecting costs], improve bargaining power with suppliers, streamline the processes and most importantly better utilize knowledge [explicit and tacit], expertise [knowledge experts] and experience [transfer of tacit knowledge] of people involved in this BP [Business Process] (Seethamraju and Marjanovic, p. 929).

Seethamraju and Marjanovic's focus first on the knowledge of process, then on Business Process Management seemed to be a successful approach. Işik et al.'s (2012) study on knowledge intensive business process (KIBP) verses non-knowledge intensive business processes (non-KIBP) may prove to be an important study for further research on KIBP and non-KIBP within business organizations. Their study findings showed that KIBP were more effective than non-KIBP; however, most of the KIBP represented in their study were of tactical and strategic processes (Işik et al., p. 525). The organizations in the study ranged from managerial, administrative, technical, service, financial/insurance service, manufacturing, government, health care, retail, and others. It was also noted that KIBP "[could] be automated and routinized to a certain degree" (Işik et al., p. 527). This may have impact for further studies in standardization of tacit and specialized knowledge areas in certain organizations, and possibly for the education sector.

Knowledge sharing seemed to be a large part of value for organizations, and this concept appeared in other studies for Business Process Management and Knowledge Management. Another successful outcome for knowledge sharing was in the study by Sentanin, Santos, and Jabbour (2008) on the Brazilian Embrapa Agricultural Instrumentation Research Centre. In their

study, Sentanin et al. found that knowledge sharing between units was an important portion of the Business Process Management analysis. The research centre created an Intranet called "[the] 'Bank of Good Practices,' where all the processes analysed and improved by the corporation's centres is briefly presented to all employees and managers. Thus, a benchmark among units [is] encouraged" (Sentanin et al., p. 492).

Collaboration through Intranets was the focus of another study, in which Silva, SAP Research, and Rosemann (2012) proposed a new type of Wiki-sharing environment for organizations, called *Processpedia.* The new system would be a hybrid collaborative system that involved top-down Business Process Management and a Wikipedia-like bottom-up approach, with organizational and stakeholder knowledge (Silva et al., p. 22). Silva et al. noted that sometimes the "emphasis is on standardisation of knowledge and their shared use by the entire organisation while in other cases is on the capture of end-users tacit knowledge" (p. 21). The goal of *Processpedia* was to use the Wiki collaborative space to gather knowledge from the organization and stakeholders in one central place. It would be a similar approach to the Brazilian study on the development of their Intranet. Silva et al. showcased their idea of *Processpedia* by using the Queensland Health Payroll case study from a KPMG LLP report. This was a theoretical approach to illustrate how the system would work.

> *Processpedia* presents a unique opportunity by presenting a platform to leverage the benefit of both approaches: catering to deviations as well as standardised business rules. Also this is done while ensuring that diverse stakeholder groups collaborate to sufficiently inform the improvement process in a mutually advantageous way,

considering interests, impacts, and their various contexts and priorities (Silva et al., p. 38-39).

However, one of the limitations of the project was the actual development of the system as a public community. The design concept of *Processpedia* may be too advanced for Wiki features that are available, although this could change over time with technology advances. Other drawbacks were formal and informal knowledge, and reservations about whether the organization itself would have to change its structure to use the *Processpedia* system (Silva et al., p. 39).

Value could also be expressed visually. The colloquial phrase, 'A picture is worth a thousand words,' has a similar counterpart in Business Process Management. The phrase in Business Process Management is "[a] flowchart is worth a thousand procedures" (Islam & Ahmed, 2012, p. 292). The visual aids and images could contain text and numbers; however, they are perceived as having greater meaning rather than text and numbers.

In terms of value, an overabundance of information could be challenging and problematic. Lee and Dale's (1998) study suggest that excess measuring of processes could actually be detrimental and ineffective. They found that in one particular business unit, there were measures for absolutely everything, which overloaded the managers, and they could not use the information effectively. It was a case of quantity over quality. "In an effort to get results there is an element of 'cart before the horse' in the application of BPM [Business Process Management]" (Lee & Dale, p. 221). Measurement of processes is usually required to have meaning in order to be effective and productive in terms of value. McAdam and Donaghy's (1999) case study in the

public sector had similar conclusions to Lee and Dale's excessive measurement findings. "Interviewees reported that performance measurements were set at the micro-level but fulfillment of these measures and targets did not necessarily improve the service to the ultimate customer" (McAdam & Donaghy, p. 46). It is suggested in both studies by the researchers that further analysis was required before jumping to the measurement stage.

E. Creativity, Soft Issues, Competition, and Implementation

The concept of creativity within standards and Business Process Management has various viewpoints in the literature. Standards were usually created, documented, and reviewed to improve Business Process Management, and standardization can have some creative license within that process, if permitted. However, some studies have shown that too much focus on standardization can have negative effects (Işik et al., 2012) and may enhance or hinder creativity (Paper, 1997).

Davenport et al. (1990) suggest that "setting goals that will stretch the organization will also provide inspiration and stimulate creative thinking" (p. 15) and when "designing a business process [it] is largely a matter of diligence and creativity" (p. 17). Seethamraju and Marjanovic (2009) also recommended that process design needs to be "designed and coordinated in order to best leverage individual and collective knowledge, experience and creativity" (p. 931).

The teamwork involved at Paper's (1997) study fostered creativity, but the organization guided the process as "[the organization] believe[ed] [that] creativity without direction [was a] wasted effort. Moreover, it [was] obvious that individuals move from design, to intelligence, to choice (and backwards) at different rates and in different ways" (Paper, p. 222). In this case,

even creativity had Business Process Management processes and standards. It was directly "related to creative solutions to business problems and applying BPS/I [Business Process Simplification and Improvement methodology] to initiatives" (p. 219). The organization still had authority and control over how much creativity was involved in process decisions; however, not all organizations allow creativity in Business Process Management. Creativity was also a way for Caterpillar (the organization) to encourage employees to "[to develop] 'out-of-the-box' thinking and help dislodge a status quo mentality" (Paper, p. 230). One of the challenges with creativity at Caterpillar was that creative training was only provided once during the BPS/I process. Brainstorming in teams was another type of creativity encouraged by the organization.

Işik et al. (2012) provided a link between standardization and creativity, which had negative impacts. "There is an imminent danger of killing creativity and losing customer value, thus harming the process rather than improving it, when there is too much focus on standardization" (Seidel et al., 2010 - as cited in Işik et al., 2012, p. 517). Sometimes with standardization, organizations may give the impression that there is a micro-centered view, with no room for creativity. As with the study by Paper (1997), Caterpillar had allowed its employees some degree of creativity, but not a limitless amount. Organizations may need to assess the value of creativity internally; on the other hand, the type of organization may also be a factor in permitting or curbing creativity.

Soft process should be included with the study of Business Process Management (McAdam & O'Hare, 1998; Elzinga et al., 1995; McAdam & Donaghy, 1999; Palmberg, 2010). McAdam and Donaghy (1999) concluded in their study that "proper attention must be paid to many of the 'soft issues' of people management which underpins the BPR [Business Process

Reengineering] process" (p. 48). Interim teams within a team going through processes are sometimes required to address people management issues. It has even been suggested by Elzinga et al. that a human resources system should be put in place while going through Business Process Management to manage the actual change process (p. 123).

The case study with the richest findings for soft processes in the literature review was Palmberg (2010). In all three organizations studied by Palmberg, each one had different soft issues arise. For Organization A, a logistics company, under each process owner was a team leader responsible for personnel (p. 103). This related to comments from Elzinga et al. (1995) about people management, which was implemented in that particular Swedish organization. Before the restructuring, employees could more likely blame a specific person if things went wrong, but now with more shared responsibly and more control on the financial side, the group was more collaborative between departments, and blame was harder to pin on one person (Palmberg, p. 104). A negative impact of increased productivity was stress for workers with increased responsibility. Organization B, an energy producer owned by a larger European group, had an increase in morale as well as an increase in sick leave for the process owners, both of which were caused by stress with larger responsibilities added with the change in organizational structure (Palmberg, p. 105). Organization C had a similar risk to Organization B. Employees had a risk of taking on too much added responsibility than time allotted for the job (Palmberg, p. 107).

Most businesses have competition and other challenges–either internal, external, or a combination of both. Competition is a strong market driver and "[w]ith competition there can be no true 'team spirit' and without competition there can be no success" (Lee & Dale, 1998,

p. 222). Most of the competition references in the literature were general in nature, and were similar to one of McAdam and O'Hare's (1998) conclusions: "enabling processes are becoming more important due to increased competition and increased networking within organizations" (p. 236).

On the other hand, the findings by Lee and Dale (1998) revealed a negative internal view of competition. The study showed how internal competition at every level could become a barrier to Business Process Management, and could have negative results. "The corporate organization encourages competition and reward and recognition is a major element of their HRM strategy, yet this strategy prevents them and the BU [Business Unit] actually achieving its vision of a quality culture" (Lee & Dale, p. 222).

Most of the barriers and challenges in the literature were about the actual process, different views of teams, technology, organizational goals and objectives, and not as much focus on the politics of an internal business unit. Lee and Dale (1998) also provided other findings of internal challenges with internal barriers, turf-protection, and poor communication. "[D]epartment teams with their own procedures and approaches to the business which creates barriers of understanding communication and competition; the small business thinking of the teams in the BU [Business Unit] perpetuates the turf-mentality and poor communication exists throughout the unit" (Lee & Dale, p. 222). These challenges may be present in some form or another within other organizations.

Palmberg's (2010) study, in particular, followed up with the implementations of the recommended Business Process Management review. Palmberg reviewed Organization C over

two years after the case study was complete. She was partially positioned at the company, and actively participating in their process development through action research. The follow-up of a case study with actual implementations, demonstrates the importance of continuous review and follow-up in Business Process Management. Palmberg suggested that "[t]his is important, as it enables access, collection, analysis, and validation of empirical material" (p. 100) in a research area that may not have enough empirical research (Palmberg; Hellström & Peterson, 2005 as cited in Palmberg, 2010).

F. Management Support

Lack of management support was one of the major reasons for failure of Business Process Management and/or implementation challenges (Davenport et al., 1990; Elzinga et al., 1995; Lee & Dale, 1998; McAdam & Donaghy, 1999; Sentanin et al., 2008; Seethamraju & Marjanovic, 2009; Palmberg, 2010; Nwabueze, 2012). The type of organization did not appear to have an impact on findings regarding presence or absence of management support. In order for Business Process Management to be successful, all management levels need to be supportive and understand the process and reasons for change (Elzinga et al.; Nwabueze; Davenport et al.; McAdam & Donaghy). McAdam and Donaghy's study on staff perceptions and critical success factors in the public sector reflected these conclusions further, as "[a]ll grades of staff considered top management's understanding of BPR [Business Process Reengineering] to be the most important of the factors listed for success of BPR in the organization" (p. 41). Management and business units should both be in the loop of processes occurring in the organization. One of the findings from Lee and Dale revealed that "the corporate headquarters are not in touch with what

is actually happening at the unit level and that the BPM [Business Process Management] process is not revealing the whole picture to senior management" (p. 223).

One successful strategy of reducing management resistance and power was revealed in the Sentanin et al. (2008) study, which found that implementing a feedback process helped tremendously (p. 494). In Palmberg's (2010) study, all three organizations used internal recruitment for positions of process owners, with more responsibility and status. Providing support to managers and inexperienced managers appeared to help with management support (Palmberg, p. 107).

G. Literature Review Conclusion

In general, the literature for this study focused on the topics of knowledge audits, standardization, value, creativity, productivity, soft issues, competition, morale, and management support, but neglected to address the areas of organizational culture and financial impacts. Many of the studies focused on improvements and recommendations for Knowledge Management and Business Process Management; however, follow-up of implementation with organizations was lacking in the research area. Overall, the research studies demonstrated that the type of organization did not significantly play a role or seem to have an effect on Knowledge Management or Business Process Management.

III. Theory

Cybernetics and Design theory complement the concepts of Business Process Management and Knowledge Management, so these theories were used to inform the design of this research study and also the analysis of the results. Visual imagery is used extensively to

explain concepts and illustrate processes in Business Process Management and Knowledge Management. Often times, no textual explanation is provided with illustrations for mapping systems, processes, or knowledge.

A. Cybernetics

Norbert Wiener first coined the term *cybernetics* in 1948 (Wiener, 1954; Beer, 2001; Scott, 2004; Murray, 2006; Pangaro, 2010). Cybernetics comes from the Greek root word "steer" or "steermanship–*kubernetes*," which translates to English as, *cybernetics* (Wiener; Beer; Pangaro; Murray). There are two orders of cybernetics – first and second; however, the focus for this research study will be on second order cybernetics. Cybernetics relates how machines function like the human brain in terms of a feedback system within the body. "The control of the machine [organization] on the basis of its *actual* performance rather than its *expected* performance is known as *feedback*" (Wiener, p. 36). Wiener used the terms *input*, *output*, *memory*, and *feedback*, which are essential to Business Process Management and Knowledge Management.

Second order cybernetics is a non-mathematical approach to communication theory because it connects the concepts of goals, action, feedback, and control in relation to information flow. It has a circular loop system. The important element of second order cybernetics is the introduction of feedback into the system, which "lead[s] inevitably to a reality that we construct in constant feedback and communication with and in an environment" (Murray, 2006, p. 216). Visual illustration is an added value for showing how systems are connected, and how feedback is looped into the system.

In a video interview, Pangaro (2010) states that "[i]ntelligent systems and human beings that interact with their environment, have goals. They use feedback to get to their goals. So cybernetics, as a science of feedback, information, and goals, is incredibly valuable in a number of disciplines." Because of the feedback system and control of information, cybernetics is applicable to many disciplines. Scott (2004) notes "[c]ybernetics is interdisciplinary, transdisciplinary, and metadiscipline" (p. 1368-1369). Cybernetic systems exist in everyday life, and especially in organizations. Pickering (2010) suggests "[w]e might thus think of cybernetics as staging for us a *performative epistemology*, directly engaged with its performative ontology–a vision of knowledge as *part* of performance rather than an external controller of it" (p. 25).

Business processes and Knowledge Management are continuously evolving. Feedback and knowledge are essential processes within an organization. Scott (2004) reiterates the importance of process in cybernetics. "[K]ey concepts are "process" and "product" and that its main methodology is to model the form of processes and their products, abstracted from any particular embodiment" (p.1367-1368). With feedback, especially in Business Processes Management and Knowledge Management, there exists a high possibility for change with processes and knowledge. Murray (2006) suggests that, "[c]ircularity, feedback, and communication – with all of its negotiations and hit-and-miss potential – imply change. They take place over time in a constantly changing environment [an organization]" (p. 217).

From a cybernetics perspective, knowledge and learning methods are also significant within an organization. Wiener's (1954) original theories on cybernetics and learning are still relevant today, and are described by other authors such as Steinbruner (1974), Murray (2006), and Pickering (2010). Wiener suggests that

> feedback is a method of controlling a system by reinserting into it the results of its past performance [prior knowledge]. If these results are merely used as numerical data for the criticism of the system and its regulation, we have the simple feedback of the control engineers. If, however, the information which proceeds backward from the performance is able to change the general method and pattern of performance, we have a process which may well be called learning (p. 84).

Information and knowledge that has value within a context is important within an organization. Learning through a cybernetic lens provides a more systematic approach, and successes and failures depend on the analysis and implementation of the feedback (Wiener; Steinbruner; Murray).

Organizational memory plays a role in learning from prior success and failures (Huber, 1991), which is crucial in Business Process Management and Knowledge Management. Steinbruner (1974) notes that "[o]ver time, those programs and standard operating procedures persist that are successful in the limited sense which is pertinent; unsuccessful ones drop out" (p. 78-79). The feedback loop will provide knowledge about which processes are more successful than others, and those that fail, still have value in terms of the history (organizational memory) for the organization. Murray (2006) proposes that a cybernetic view of learning "may be more accurately described as engendering knowing rather than some kind of static, stored knowledge. In this cybernetic view of the world it appears that learning happens to us as we communicate in the environment [organization]" (Murray, p. 217).

Decision-making, another part of Business Process Management and Knowledge Management, is another area where the cybernetic framework is applicable. Steinbruner (1974) suggests that the organizational decision-making

> entity is assumed to have a limited repertory of action patterns (programs). It proceeds with one sequence of actions (which produces a certain product as outcome) until feedback on critical variables forces one of these variables out of its tolerable range. There is then a change in the response patterns which, if it restores the critical variable to its desired range, then persists until another disruption occurs (p. 78).

Employees who use business processes and manage the knowledge within the organization, are not always involved with decision-making. "Knowing something about cybernetics may not change your view of what constitutes good teaching [making decisions within an organization] but it may provide a different and interesting explanation for why a particular approach seems to 'work' while another does not" (Steinbruner, p. 220). Although Murray's (2006) focus with cybernetic theory is through teaching and learning, her comment directly relates to Steinbruner's success and failure of decisions, and why input from users is valuable in systems.

B. Design

Cybernetics also connects with Design theory in terms of design of systems and communication feedback. Design, according to Aakhus (2007) "reflects a concern for creating useful things [knowledge] and the process of creating useful things (business process management)" (p. 112). Feedback itself is a form of communication, and how the system is designed in theory and practice, is a fundamental part of Business Process Management and

Knowledge Management. Communication design "happens when there is an intervention [feedback loop] into some ongoing activity through the invention [business process and knowledge management] of techniques, devices, and procedures that aim to redesign interactivity and thus shape the possibilities for communication" (Aakhus, p. 112). Communication design also requires creativity in the designer. Nelson and Stolterman (2003) suggest that "there is no such thing as a straight-forward depiction of something–a 'direct image' formation–without the involvement of an imagination and judgment" (p. 168).

Business Process Management and Knowledge Management rely heavily on imagery for the communication of processes that exist and those that need to be created. "Design communication needs to convey comprehension, meaning and the promised value of *that-which-is-not-yet*. This can be done through the utilization of *diathenic graphologue*, which means to let a thing be seen through its image" (Nelson & Stolterman, 2003, p. 174). Nelson and Stolterman (2003, 2012) consider this *diathenic graphologue* an allopoietic design communication process. Allopoietic means *other making* (Nelson & Stolterman, 2003, p. 172).

Design communication also requires certain processes to determine, create, and design an outcome for the communication, similar to Business Process Management and Knowledge Management. For designers, there are also choices to fix, restore, or redesign based on the situation or feedback (Nelson and Stolterman, 2012, p. 250). Nelson and Stolterman describe these choices as the assessment stage of becoming a designer. This relates directly to the designing of Business Process Management and Knowledge Management. The creativity and collaborative environment that communication design requires in Business Process Management

and Knowledge Management becomes part of a cybernetic feedback communication design cycle.

C. Theory Conclusion

Communication as a design through a cybernetic lens reinforces the importance of feedback and learning in an organization. Formal dialogue may not often be enough to communicate the designs of a process, and "[g]ood designs must be given form and communicated" (Nelson & Stolterman, 2003, p. 179).

IV. Methodology

A. Research Design

For this study, the epistemological paradigm of an exploratory single case study was chosen as the research design. Yin (2009) suggests five rationales for selecting case study designs. This research study falls under the third rationale of a representative or typical case. "[T]he objective is to capture the circumstance and conditions of an everyday or commonplace situation" (Yin, p. 48). This study explored the day-to-day uses of business process and knowledge management within the revenue-generating Faculty of Extension at the University of Alberta. "The lessons learned from these cases are assumed to be informative about the experiences of the average person [the employees at the Faculty of Extension] or institution [University of Alberta]" (Yin, p. 48). Simons' (2009) definition of a case study enhances Yin's to include knowledge and actions. Simons suggests that a case study is

> an in-depth exploration from multiple perspectives in 'real life' context and the primary purpose is to generate in-depth understanding of a specific topic (as in a thesis),

> programme, policy, institution or system to generate knowledge and/or inform policy development, professional practice and civil or community action (p. 21).

The reference to knowledge and context within an organization is important because generation of knowledge and/or creation of change within the organization was one of the primary goals of this exploratory study.

Case studies have strength because they explore and assist in the comprehension of organizational process, and the subtleties of change (Simons, p. 23). Access to organizational documents in a case provides more value for the study. Merrigan, Huston, and Johnston (2012) note that "[w]hen a researcher gains access to corporate [an organization's] materials, the data can be quite revealing" (p. 156).

A criticism and limitation of case study analysis is the limited opportunity for generalization when cases are specific and often anonymized (Gomm, Hammersley, & Foster, 2009, p. 99). However, generalization can also be viewed from a positive direction, which Gomm et al. classify as theoretical inference and empirical generalization. Theoretical inference has a goal of portraying conclusions of relationships that are universal with similar settings, while empirical generalization involves statistical and non-statistical findings that can produce general findings (Gomm et al., p. 103-104). A debatable issue within case study methodology appears to be on assumptions and statistical reporting. Gomm et al. suggest

> [d]enial of the capacity of case study research to support empirical generalization often seems to rest on the mistaken assumption that this form of generalization requires statistical sampling. This restricts the idea of representation to its statistical version; it

> confuses the task of empirical generalization with the use of statistical techniques to achieve that goal. While those techniques are a very effective basis for generalization, they are not essential (p. 104).

These questions and assumptions relate to this study. Studies of Knowledge Management and Business Process Management are often seen to be lacking in empirical data, as noted in the Introduction and Literature Review sections.

Yin (2009) strongly advises researchers to avoid bias in case study research designs (p. 72). Avoiding bias was extremely relevant in this study. The Principal Investigator, at the time of this study, was and currently still is an employee of the organization that was studied, and had pre-existing professional relationships with participants. The Principal Investigator acknowledged that the biases that may have been present during the research process due to her "insider knowledge" of the organization, were consciously set aside as much as possible, particularly during data analysis. All findings and discussions were based on results from the study.

Another significant factor in the design of this study was anonymity of the individual responses for the electronic questionnaire. Yin (2009) suggests that

> anonymity is necessary on some occasions. The most common rationale occurs when a case study has been on a controversial topic. Anonymity then serves to protect the real case and its real participants. A second subsequent occasion occurs when the issuance of the final case report may affect the subsequent actions of those that were studied (p. 181).

With an internal organizational study, there is a risk of topics potentially becoming controversial and employees choosing not to participate for fear of job loss, low morale, bias against other co-workers, or any other number of reasons. Anonymity provides an opportunity for employees to provide their genuine responses and opinions. Responding within an anonymous environment can reduce employee stress, anxiety, fear, and apathy to participate in a questionnaire.

B. Overview of Study Organization

The Faculty of Extension was formed in 1912, and celebrated its centenary in 2012. The faculty mandate, "[t]o create opportunities for lifelong learning in response to the needs of individuals and society by engaging the university and communities in learning, discovery, and citizenship," (Faculty of Extension, 2002-2012a) reflects its specialties with continuing education programs, a focus on research, includes several institutes, centres, and one graduate program. The fact that the Faculty of Extension is revenue-generating makes it unique among other faculties within the University of Alberta. The Faculty of Extension is located in Enterprise Square, the old Hudson's Bay historic building, in the heart of downtown, Edmonton, Alberta, the capital city of Alberta.

The continuing education programs offer non-credit certificate programs, citations, and designations. With over 700 courses offered (Faculty of Extension, 2002-2012b) and a variety of learning options (face-to-face, day time, weekend, evening classes, and online), students can choose from the following areas of study: Arts and Humanities; Communications; Community Engagement Studies; English Language Program; Government Studies; Management; Sciences; and Teaching and Learning (Faculty of Extension, 2002-2012b). For a complete list of programs, refer to Appendix D.

Research is a significant part of the Faculty of Extension. There are six institutes and centres: Community-University Partnership (CUP); City-Region Studies Centre; Alberta Gaming Research Institute; Canadian Journal of University Continuing Education; The Centre for Public Involvement; and First Nations Children's Action Research and Education Service (Faculty of Extension, 2002-2012c). One graduate program is offered through the Faculty of Extension, the Master of Arts in Communications and Technology (Faculty of Extension, 2002-2012d). Another service that is offered, in addition to student and instructor services, is Evaluation and Research Services. The Evaluation and Research Services office works with "clients to conduct formative and summative program and project evaluations. In addition, we conduct our own program of research, collaborate on research projects with partners at the U of A and other institutions, and provide research support services" (Faculty of Extension, 2002-2012e).

C. Participants in the Study

The participants in the study were employees from the Faculty of Extension, University of Alberta. The total number of Faculty of Extension employees varies depending on the types of job roles, as some positions are temporary. During the period this study was conducted, there were approximately 250 employees within the Faculty of Extension. There was no obligation or pressure for employees to participate in this study.

D. Research Methods

A mixed method approach was used for this study. Primary data was collected through an anonymous electronic questionnaire, and secondary data was collected through a textual analysis of the University of Alberta and Faculty of Extension websites, and the Faculty of Extension Intranet, 'The Lantern.' Yin (2009) suggests that "[t]he most important advantage presented by

using multiple sources of evidence is the development of *converging lines of inquiry*, a process of triangulation and corroboration" (p. 115-116). The mixed method approach was selected because of the exploratory design of the study and because this approach afforded the best opportunity to gather both explicit and tacit knowledge. Explicit knowledge of business process and knowledge management data can come from a textual analysis; however, tacit knowledge was provided by the participants from the questionnaire.

Another reason for selecting the data gathering technique of an electronic questionnaire was the recruitment and ease of access for employees to participate in this study. All Faculty of Extension employees have an email address, access to a computer at the organization, and are connected to the UAlberta Google Apps network. Refer to Figure 3 for the various applications of Google Apps. Many employees are familiar with Google Drive, and particularly in this case, with the electronic spreadsheet and form applications. The UAlberta Google Apps is the University of Alberta's approved and secure technological platform (Office of the Vice-Provost, Information Technology, 2002-2013b).

Figure 3: What's in Google Apps (Adapted from the University of Alberta, Office of the Vice-Provost (Information Technology), 2002-2013a)

A questionnaire can gather different types of data, provide an overview of the organization, involve various people, identify needs, opinions, attitudes, beliefs, feelings and perceptions, and describe behaviors (Thomas, 2004, p. 2-4). It is also a familiar type of data gathering technique for participants because questionnaires on various topics are common in daily life. For example, social media or news websites have surveys on various contemporary or

contentious issues. One unfortunate disadvantage of using a questionnaire may be a possible low response rate; however, this drawback is offset by the fact that short or long answer questions and comments can provide rich qualitative data. Another possible disadvantage is the loss of the non-verbal communication that can be observed or heard in other methods, such as face-to-face and telephone interviews, focus groups, and workshops. On the other hand, the absence of non-verbal communication can reduce bias in a questionnaire.

The process of building the questionnaire went through seven phases: drafting of questions; creating the 'Information and Consent Agreement' letter (refer to Appendix E); designing the electronic web-based version (refer to Appendix F); drafting of email for distribution to participants (refer to Appendix G); approval from ethics review; field testing; and implementing revisions from the field testing feedback for the final version of the questionnaire (refer to Appendix H). A research poster (refer to Appendix I) was also created for awareness of the study, which was displayed in the staff room and in other areas of the Faculty of Extension. Fifteen questions were designed; however, the total number was nineteen including all follow-up questions. All follow-up questions were labeled with the original number plus the letter 'B,' for example, Question3B. The type of data questions that were used were: nominal (Questions 3B, 4, 7, and 10); ordinal (Questions 1, 2, 3, 5, 6, 12, 12B, 14); Likert-type rating scale (Question 9); fixed-and-open response items (Questions 1, 3B, 4, 7, 10, and 12B), fixed-response items (Questions 2, 5, 6, 12, 14); and open-response (Questions 6B, 8, 11, 13, 14B, 15). Specific questions (3, 6, 12, 14) also had follow-up questions with automatic navigation mechanisms to the appropriate page depending on the first response selected from the main question.

The anonymous questionnaire was designed to record only the responses participants provided. Responses could not be tied to individual respondents in any way. Two questions had a risk of identifying other participants in the organization (Questions 8 and 14); however, a reminder statement was provided to maintain anonymity. The following text was included in both questions: "To maintain anonymity, please describe in a way that will not identify you or other co-workers."

Thomas (2004) identifies three types of fixed-response questions: adjective, behavior, and other (p. 32), which were used to design the fixed response questions for the questionnaire. In particular, with adjective checklists, Thomas suggests that these types of questions (for example, Question 3B) can **"**take the "pulse" of the community [or the organization] at different points in time and trends can be identified" (p. 33).

Field-testing of the questionnaire was completed within a selected closed sample of the participants. Field-testers were chosen from different areas, with various levels of seniority and expertise. Thomas (2004) suggests a pilot testing for web-based questionnaires should consider the following items for feedback, "access, navigation, directions, response mode, response scales, review previous responses, required questions, fixed-sum questions, submit button, and database" (p. 114). For the complete list of questions within each item, refer to Appendix J.

Field-testers were provided the approved 'Information and Consent Agreement' letter, a draft paper version of the questionnaire, and the link to electronically evaluate the electronic version. Field-testers provided positive and constructive feedback. Some questions were re-worded to more clearly explain specific concepts and provide more examples, adding different

terminology for fixed-response questions, and suggestions for more Likert scale type questions. Field-testers commented that the order of the questions and navigation were easy to follow through the electronic version of the questionnaire. In specific questions, Questions 8 and 14, field-testers concurred that it was important to emphasis anonymity.

Using an electronic questionnaire can reduce or eliminate costs. In this study, no costs were associated with the design or implementation of the electronic questionnaire. It was designed and built as an anonymous web-based questionnaire by the Principal Researcher, using the Google Form and Spreadsheet applications of Google Drive. For a virtual tour of how to create Google Forms via Google spreadsheets, visit Google Forms.

The features of Google Forms allowed anonymity to be built into the design of the electronic questionnaire. At the top of all forms is a box called 'University of Alberta Settings.' There were two checkbox selections: 'require University of Alberta login to view this form' and 'automatically collect respondent's University of Alberta username.' To allow anonymity neither checkbox was selected, ensuring that participants' login identification, CCID (Campus Computing ID) and email address were not recorded in the response. Responses were automatically populated from the questionnaire form to a linked Google spreadsheet. Participants were sent an email message announcing the study and the web location of the questionnaire via the official Extension Staff Google Groups list. Although there were 250 employees at the time of this study, only 204 email addresses were on the Extension Staff Google Groups list. Missing email addresses were likely due to vacant positions within the Faculty of Extension or the presence of short-contract employees from whom email addresses had not been gathered in the group list. Participants received a PDF attachment of the official electronic 'Information and

Consent Letter,' which also contained the electronic questionnaire link. To access the electronic questionnaire link, participants needed to have access to a computer with an Internet connection.

Secondary data was collected through a textual analysis of two websites (Faculty of Extension and University of Alberta) and the Faculty of Extension's Intranet, 'The Lantern.' Simons (2009) suggests using the term *document analysis*, instead of *textual analysis*, as this "includes formal and informal documents and multi-media within an organization" (p. 63). Because the sources analyzed included public websites and an Intranet, both of which contained multi-media, the term *document analysis* was more appropriate to be used in this study.

Corporate Intranets are often used for Knowledge Management and retrieving information. Bowman (2002) suggests that Intranets based on World Wide Web applications are frequently utilized for many Knowledge Management projects. "This is due to the ease with which documents and multimedia materials can be linked and made widely available to anyone" (Bowman, p. 36). The Faculty of Extension's Intranet, as an internal secondary source of data, provided information on processes and a snapshot in time of one of the organization's Knowledge Management systems.

E. Methods of Analysis

With an exploratory case study, the analysis followed a linear-analytic structure. Yin (2009) notes that exploratory case studies "may cover the issue or problem being explored, the methods of exploration, the findings from the exploration, and the conclusions (for future research)" (p. 176). Several methods of analysis were used in this study including: statistical, graphical, content analysis, imagery, and quality metrics.

The Google spreadsheet, which automatically recorded the anonymous responses, was exported for analysis into Microsoft Excel. The reason for exporting the data was twofold. First, the Google spreadsheet was only accessible through an Internet connection, and if no connection was available, the Principal Investigator would not have access to the data for analysis. Second, Microsoft Excel, as a software program, has more capability than Google spreadsheet. Google spreadsheet was able to summarize most of the information; however, Microsoft Excel was the main software tool used for this analysis.

Content analysts "examine data, printed matter, images, or sounds–texts–in order to understand what they mean to people, what they enable or prevent, and what the information conveyed by them does" (Krippendorff, 2013, p. 2). Content analysis relates to Cybernetics and Design theory with the themes of what information and data mean, how it is interpreted (feedback), and how it is designed (text, graphics, video, or sound). Content analysts "must look outside the characteristics to examine how individuals use various texts in their respective worlds" (Krippendorff, p. 28). The feedback loop of Cybernetics fits well with this examination of documents completed in this study. Business Process Management and Knowledge Management are in constant cycles of processing and documenting visual diagrams or other visual aids, which appear similar to cybernetic feedback loop diagrams.

Judgments, institutional process, and clusters were significant methods used within the document content analysis. Judgments need to be justified. "If results of organizational communication research are to lead to consequences, they must be couched in the studied organization's terms and be measured against the standard of communication structures known to be successful" (Krippendorff, 2013, p. 61). Because organizations usually have judgments and

institutional processes already embedded within their Knowledge Management and Business Process Management, reviewing current practices was relevant to this study.

Institutional processes, on the other hand, focus on structures, which are central to the heart of this study. "Much communication that takes place within institutions [a University setting in this study] is routine, relational, and coordinative, and it is valued as such, even enforced, without apparent reason" (Krippendorff, p. 72). Additionally, Design theory is related to institutions in the design of the communications and processes that are implemented. Aakhus (2008) notes that "[d]esigns for communications are evident in procedures and formats available through technologies, organizations, institutions, and communities that provide affordances and constraints for interaction" (p. 1219).

Clustering was used for combining specific questions and coding attributes, and for creating comparisons. Content analysts must note "that different clustering procedures may yield vastly different results; thus, to avoid ending up relying on arbitrary findings, they must always justify their use of particular clustering techniques in relation to the context of their analyses" (Krippendorff, 2013, p. 206). The reasons for cluster data groups are explained further in the Findings section.

For content analysis of the open-ended questions and document analysis, responses were coded for specific words, and counted for statistical purposes. Krippendorff (2013) suggests that "[s]o called word clouds are popular visualizations of frequencies of mentions (p. 189). For the most common occurrences and frequencies of particular words or findings, a word cloud, was provided for visual representation.

Secondary data was analyzed through content and document analysis. Because the 'The Lantern' had primary and secondary data sources, a mixed methods approach specifically for the Intranet was utilized. This study's method of analysis for the Intranet was based on aspects of Leung's (2000) study. The participants of Leung's study were from a local university in Computing Services Centre, and this study focused on a continuing education faculty at a university. Leung suggests "there has been little quality measurement for intranet applications" (p. 138). This study used a similar strategy to Leung's for document analysis, which was based on the International Organization for Standardization (ISO) quality metrics. Some of these quality metrics were integrated into the response answers of the questionnaire questions. This served as a basis for comparing a document analysis of the actual technology platform tool with actual user (participant) feedback. Cybernetics and Design theory are heavily intertwined with the technology platform and content (knowledge and information) for Intranets.

V. Findings

A. Questionnaire Data and Number of Participants

Data from each question was populated in separate columns in the spreadsheet. If a participant chose not to answer a question, the cell in the spreadsheet remained blank with no data. Overall, the actual number of participants in the study was 41, with one null response. The null participant clicked through the questionnaire and submitted with no responses, causing the blank response within the spreadsheet.

B. Procedures for Sorting and Coding Data

The raw data for the questionnaire was exported from the Google spreadsheet into Microsoft Excel for data processing and analysis. The Excel document was organized into two master spreadsheets and a separate spreadsheet for each question, including separate spreadsheets for follow-up questions. Raw data was placed in the first tab, labeled as 'Results,' and was used for the data in all subsequent tabs. Participants were coded in the order that they were automatically recorded in the Google spreadsheet. Each participant was coded with the letter *P* and a numerical number, for example, P01. All questions were coded with the letter *Q*, followed by the numerical question number, and an abbreviated title of the question, for example, Q1Job_Role.

The first master tab, 'MasterCodeTable,' was the main tab for coding all data in the Excel spreadsheet. The 'MasterCodeTable' was set up to be a summary spreadsheet, linking the results from other tabs. The second master tab, 'MasterCodeTableQ1&2,' clustered demographic data for job roles (Question 1) and age (Question 2). These merged cluster attributes provided more detailed data for analysis, especially for questions 3, 3B, 4, 5, 6, 7, 9, 10, 12, 12B, 14, and 14B. Five major coding categories: variable name, data type, code, attributes, and results, were used for each individual question tab. One drawback using the 'check all that apply' option in Google forms was that all participant responses were placed in one cell, instead of separate cells. In order to code and analyze the findings, separate columns within the Excel spreadsheet were created for each 'check all that apply' question. For all 'check all that apply' questions, 1, 3B, 4, 7, 10, and 12B, the total number of responses generally exceeded the actual number of participants in the study. A statement was provided to indicate the differences in responses versus actual participant

responses for each of the questions that required further explanation. Questions that required content analysis, 6B, 8, 11, 13, 14B, and 15, were also coded in the 'MasterCodeTable' tab. The coding terms used were taken from the Literature review and data review in the questions.

C. Questions

1. **Demographic Data – Job Role**
2. **Demographic Date – Age**

Question 1:	*Please choose a job role that best describes your duties. This data will be helpful for having different perspectives across the organizational structure of the Faculty of Extension, University of Alberta.*
Question 2:	*Please select your age group.*

Job role and age were included in the questionnaire for background context, and as a source of analysis for comparing and constructing any correlations within the data. All participants provided their age; however, one participant, P05, did not provide a job role. The results are shown in Figure 4. It was decided not to collect gender demographic data as an added anonymity precaution for the participants.

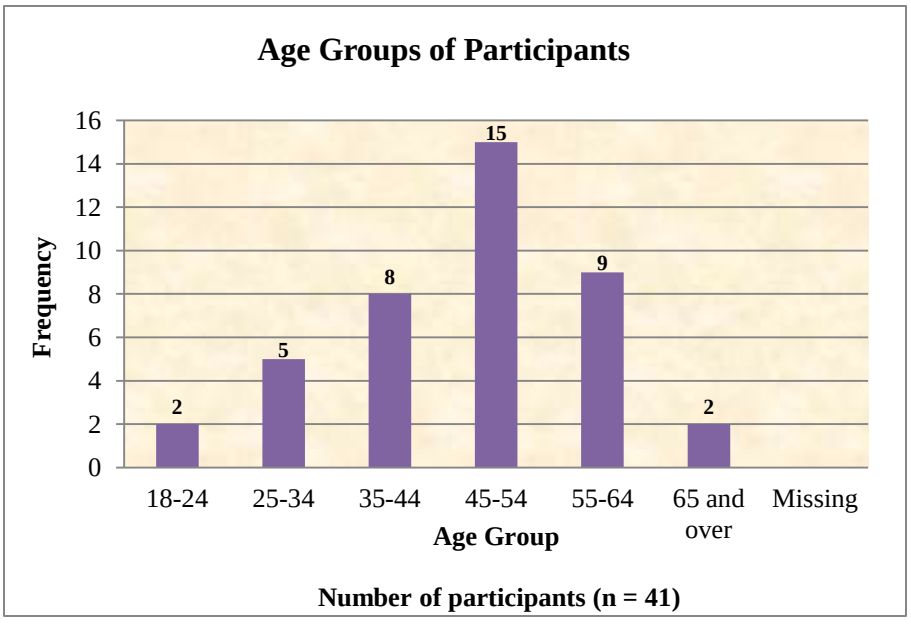

Figure 4: Age Demographics of Participants

Participants were allowed to choose more than one job role in this study because University of Alberta employees often have more than one job role. For example, researchers may also be teaching courses or educators could have supervisory roles in a managerial or academic director position. Two job roles were provided in the 'other' category; however, for the purposes of this study, they were placed under the administrative support staff category. The administrative support staff category generalized many roles. Providing specific departmental roles such as accounting, human resources, marketing, may have had the potential to identify participants in some manner, so these more specific categories were not used.

All dual job roles were coded in both job role categories to provide data for analysis and comparison. Dual job roles were identified in the analysis; however, when providing data about participants, the actual number was referenced. Table 3 displays the merged attributes of job role and age, and totals for the participants in the study.

Overall, there were five participants who selected dual roles: researcher and temp (temporary employee), P08; manager and researcher, P09; administrative support and educator, P31; and educator and researcher, P36. For the fifth dual role, P32 (administrative support staff and other), the participant was placed under the administrative support staff category. The participant provided a specific reference in their job title that may have had the potential to identify a specific department. P38 was placed in the other category into administrative support staff, as the specific position provided was part of the larger classification of administrative support staff. Participant quotes were coded in the following format for citation in this study: question number, participant number/age group code (Q3, P01, AS2/25-34). Age group codes are located in Table 3 in the Abbreviated Reference column.

Job Role and Age Group	Abbreviated Reference	Total
Administrative Support Staff (18-24)	AS1	1
Administrative Support Staff (25-34)	AS2	2
Administrative Support Staff (35-44)	AS3	5
Administrative Support Staff (45-54)	AS4	7
Administrative Support Staff (55-64)	AS5	4
Administrative Support Staff, Educator (45-54)*	ASE1	1
Administrative Support Staff, Other (45-54)*	ASO1	1
Manager (25-34)	M2	2
Manager (35-44)	M3	1
Manager (45-54)	M4	2
Manager (55-64)	M5	4
Manager, Researcher (35-44)*	MR1	1
Educator (65 and over)	E6	1
Educator, Researcher (55-64)*	ER1	1
Educator, Administrative Support Staff (45-54)*	EAS1	1
Researcher (45-54)	R4	4
Researcher (65 and over)	R6	1
Researcher, Educator (55-64)	RE1	1
Researcher, Manager (35-44)*	RM1	1
Researcher, Temp (18-24)*	RT1	1
Temp (35-44)	T3	1
Temp, Researcher (18-24)*	TR1	1
Other, Administrative Support Staff (45-54)*	OAS1	1
Blank (25-34)	B2	1
	Total	**46**

Actual participants n = 41

***Indicates dual job roles for results purposes, as respondents selected more than one job role category.**

Table 3: Job Role and Age Group Categories of Participants and Abbreviated Job Role Categories for referencing purposes within this study.

i. Questions Not Answered

Questions that were not answered provided valuable knowledge for this study. Table 4 shows the cluster of participants who did not answer questions. Overall, the average number of questions not answered was 1.68, the median was 1, and the maximum was 6.

Participants	Number of Questions Not Answered	Number of Total Participants
P05	6	1/41
P09, 28, 35	5	3/41
P06, 08	4	2/41
P04, 22, 24, 26, 39	3	5/41
P02, 07, 11, 14, 17, 34, 36, 41	2	8/41
P01, 15, 16, 19, 21, 25, 31, 37, 40	1	9/41
P03, 10, 12, 13, 18, 20, 23, 27, 29, 30, 32, 33, 38	0	13/41
Total number of participants (n = 41)		

Table 4: List of Participants and Total Number of Questions Not Answered

For Question 8, 16 out of 41 participants did not answer the question. Because the question asked participants to describe a situation that affected them in terms of morale, it may have been a high risk question for a non-response. Sharing a situation, even with anonymity, may have not been enough of a guarantee for participants. Many departments have horizontal and vertical integration, and even a generalization may have had identifying implications.

There were three significant peaks of specific questions with a high non-response rate: Question 8 (n = 16); Question 11 (n = 19); and Question 13 (n = 7). There were three clusters of participants P01-11, P22-28, and P35-41 that had similar patterns of non-response questions. No direct conclusions could be presumed because participants responded anonymously, and were provided a participant number in the order that responses were received. Question 15 also had a high number of non-responses (n = 19); however, this was an optional question for providing comments at the end of the questionnaire. Refer to Appendix K for individual participant response and non-response rates.

3. Intranet

Question 3:	*Do you use the Faculty of Extension Intranet – 'The Lantern'?* *An Intranet is similar to a Website, except that it is a private internal site for an organization that is usually password protected.* *If 'yes,' continue to Question 4.* *If 'no,' answer Question 3B.*
Question 3B:	*Why do you not use 'The Lantern'?*

For Question 3, out of a total of 39 responses, 14 participants responded 'yes' to using 'The Lantern,' 25 responded 'no,' and two participants, P05 (B2/25-34) and P22 (AS3/35-44) did not select any response. Participants who selected 'yes,' moved to the next question, while participants who selected 'no,' were directed to answer Question 3B.

The method selected to design and analyze the results for Question 3B was based on Leung's (2000) Intranet study. Leung used the extended ISO standards for analysis of his Intranet survey and analysis. The ISO 9126 standard of reference was developed in 1991, and provided a framework for the evaluation of software quality, with six product quality characteristics (Centre for Software Engineering, 2003). The six characteristics: functionality, reliability, usability, efficiency, maintainability, and portability, were incorporated as themes within the responses for Question 3B. ISO quality characteristics were further subdivided into 21 sub characteristics, and the extended ISO model had 32 sub characteristics (Van Zeist & Hendriks, 1996). Figure 5 displays the extended ISO model.

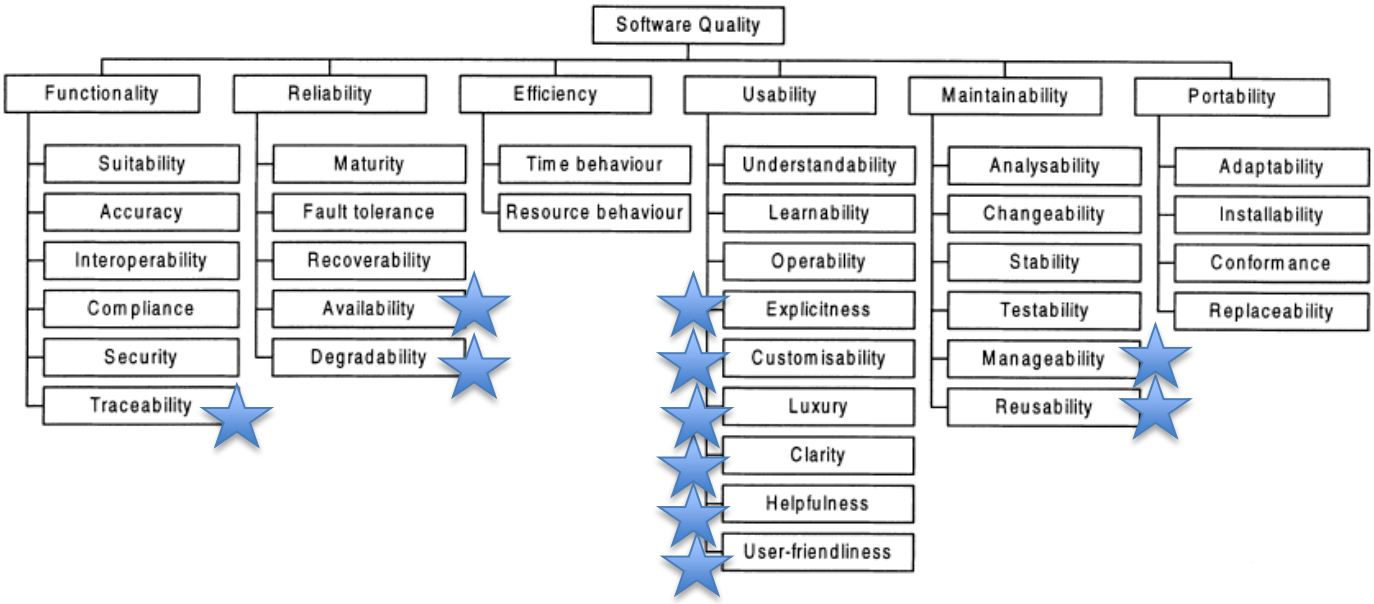

Figure 5: Extended ISO Model. (Adapted from Leung (2000), p. 139). The stars indicate added sub characteristics for the extended model.

The characteristics used from the Extended ISO model in designing the diction, theme, and meaning of Q3B's 'check all that apply' responses were: functionality (suitability and accuracy, 3B4 and 3B6); reliability (availability, 3B2); efficiency (time and resource behaviour, 3B2, 3B3, 3B5-7); usability (understandability, learnability, operability, explicitness, clarity, helpfulness, and user-friendliness, 3B3-4 3B7-9); maintainability (stability and reusability, 3B1-4); and portability (adaptability). The top five reasons with the highest responses selected for not using the Intranet are shown in Figure 6, and the remaining category results are in Table 5.

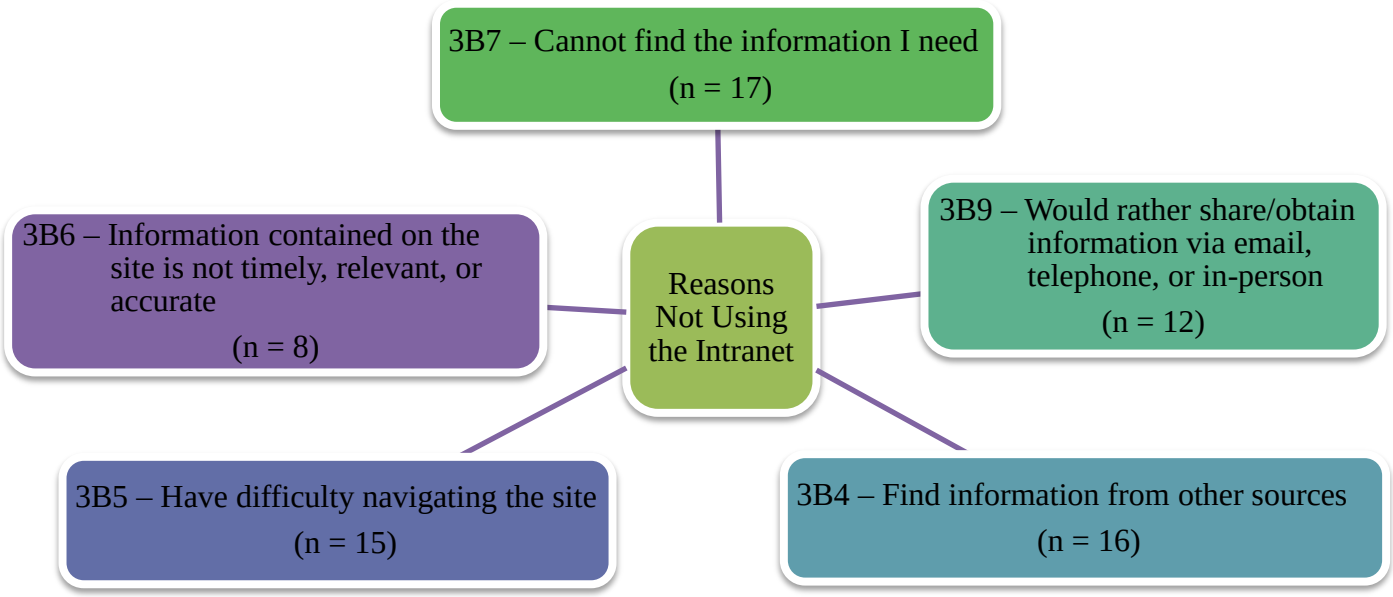

Figure 6: Top Five Reasons why Participants did not use the Intranet (n = 68 out of 81 responses)

Remaining Response Choices for Not Using 'The Lantern'	Total
3B1 Do not know what it is	2
3B2 Do not know where to access the site	6
3B3 Do not know how to use the site	1
3B8 Am not comfortable using the technology	0
3B10 Other	4
Total number of responses:	13
Total number of responses (n = 13 out of 81)	

Table 5: More Reasons Why Participants Did Not Use 'The Lantern'

Design of the Intranet, and lack of confidence that specific types of information were available, up-to-date, and easily accessible, were some of the concerns from participants. Through a further analysis, the study revealed noteworthy clusters of job role and age. The

highest number of participants that responded 'no' were from the AS4 group (n = 7), with a total of 21 responses; the second group was AS3 (n = 5) with 11 responses; and third highest tied (n = 4) between AS5, M5, and R4 with 8, 12, and 9 responses respectively. Dual roles were not included in the previous statistics in order to reflect actual age group totals. The results showed that for age group 55-64, job roles did not seem to be a factor in selecting responses. It was also important to note that this age group was also the highest number of participants in the study. It could not be predicted that the largest age group would necessarily be the dominant age group to participate in each question. Refer to Appendix L for the specific results role and age group.

Four participants provided responses in the 'other' category. Three of the four participants were Researchers in the age group 45-54. P01 made a remark concerning discretion, that "information they process is too confidential to be contained in the Intranet" (Q3B, M2/25-34). The reference to *confidentiality* suggested that the participant conscientiously was aware of the need for various degrees of security for specific information or knowledge. The type of information created and stored on the 'The Lantern,' may have had an impact on the design and structure of security level and access settings.

P09 expressed a significant assumption for the purpose of 'The Lantern' as being "an administrative only information resource" (Q3B, MR1/RM1/35-44). This could have negative implications for intended use and purpose of an organizational Knowledge Management system if other employees who did not participate in the study had the same impression regarding the purpose of 'The Lantern.' Refer to Appendix M for the results of the 'other' responses.

Linking the 'administrative comment' to the other top five reasons for not using 'The Lantern' suggested that depending on the perception of what knowledge resides in the system and how to use the technology may have a significant influence on user participation.

4. Finding Information

Question 4:	*If you need to find information about how to carry out a specific procedure that you are unfamiliar with, what do you do?*

For Question 4, 41 participants provided responses. Because this was a 'check all that apply' question, the total responses were 157. In particular, this question was structured to discover if any one method of communication was preferred in the organization. The first level of analysis was based on the spectrum of communication methods, from human interaction to virtual technology. The responses in this question provided a glimpse of the preferred type of communication by participants, but a conclusive preferred approach was not determined.

Human interaction, which included face-to-face communication (n = 38) and speaking on the telephone (n = 22) totaled almost half (n = 71 out of 157) of the overall responses. Virtual communication responses, email (n = 33) and websites (Intranet and Public, n = 49) totaled over half (n = 82 out of 157) of the responses. Figure 7

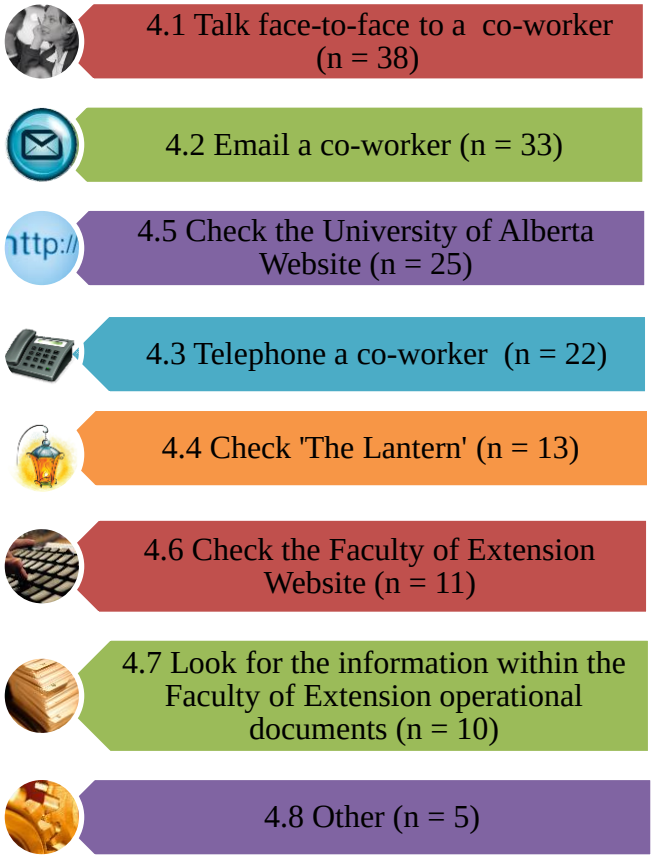

Figure 7: The Results of How Employees Find Out Information About Unfamiliar Procedures that he/she Need to Carry out the Specific Procedure

shows the results for the 'check all that apply' responses. Because there was no specification in response 4.7 – "Look for information within the Faculty of Extension operational documents," between looking for information in hard copy or electronic documents, the responses could be classified in categories of human interaction and virtual technology. The majority of the 'other' comments provided virtual communication technology resources; however, two were vague in terms contacting a specific person with human interaction or via virtual technology. Refer to Appendix N for the list of 'other' comments.

5. Templates

Question 5:	*To your knowledge, are there business processes or procedure templates available for you to use?*

This study showed a positive result of 34 out of 41 participants aware of general organizational knowledge by answering 'yes' regarding awareness that there are business processes or procedure templates available for use. The design of the question implied that the participant would have some assumptions when selecting a response. For example, the experience, seniority, and job responsibilities of the participant at the time of the questionnaire may have impacted the response rate. An employee may be knowledgeable about institutional processes – the templates, in this particular question, but not knowledgeable about specific templates and the processes associated with them.

A small number of participants (n = 6) had no knowledge of templates existing, and one participant did not respond. The study reviewed the job roles of participants who responded 'no' and found one possible correlation for the participant – a temporary employee. An assumption could be made that a temporary employee may have no knowledge of the organization depending

on the duties and length of service at the time of completing the questionnaire, and would respond 'no' to the question. The other five participants consisted of a Researcher, age group 45-54, Manager, age group 55-64, and three Administrative Support Staff in the age groups 25-34, 45-54, and 55-64 respectively. The wide range of job roles held by those who professed no awareness of joint-use templates being available meant that no job role correlations could be drawn.

6. Creating your Own Templates, Cheat Sheets, or Reference Documents

Question 6:	*Do you create your own day-to-day business process templates, cheat sheets, or reference documents?* *If 'yes,' continue to Question 7.* *If 'no,' answer Question 6B.*
Question 6B:	*Why do you create your own day-to-day business process templates, cheat sheets, or reference documents? Please explain.*

The findings of Question 6 were extremely relevant in terms of knowledge creation within an organization, and how it related to Business Process Management. Out of 41 participants, 32 responded that they created their own templates, cheat sheets, or reference documents. This study showed that there were a large range of reasons (simple to complex) why participants created their own templates. Participants provided vivid and detailed descriptions of reasons for creating their own templates. The study found that results of Question 5 juxtaposed to Question 6, suggested differences in value of institutional templates verses personalized templates with the organization

Categorical, syntactical, and thematic distinction context units were used as the first method of content analysis for the open-responses. Specific recurring terms and concepts were

used as a basis for coding. Seven categories were established and some words/concepts were clustered together. The results are shown in Table 6. All references to policy, procedures, Knowledge Management systems, and databases, were coded in the category 'language/terms used.

Reasons for Creating Own Templates, Cheat Sheets, or Reference Documents	**Total**
Quick reference, time saving, easier to create own, customize	24
Do not exist, need to create	11
Learning and retention	10
Difficult to find	2
Information in multiple places	2
Language/Terms used	5
More than one reason	16
Other	12
6B Answered 'No' to 6, not applicable to 6B	9
Missing	0
Total number of responses:	92
Total number of participants (n = 32)	

Table 6: Participant Reasons for Creating his/her Own Day-to-Day Business Process Templates, Cheat Sheets, or Reference Documents

Knowledge transfer and providing a source of information for other employees were two general overall themes. One reason for creating templates was to ensure that resources were available to an employee providing cover-off or that work could be continued in a case where the employee was no longer in the position. One participant, a Manager, in the age group 25-34, responded with a sense of humour to the question, "I create these documents in case I am somehow incapacitated, I could have someone else carry out my mission" (Q6B, P01, M2). Another participant, P28, also a Manager, but in age group 45-54, responded in a more serious and professional manner, "[t]o provide for continuity of knowledge and process in the event I am

not at the office" (Q6B, P28, M4). Some participants, on the other hand, had job duties that required them to create templates, and this was also reflected in their comments.

Several participants' style of writing demonstrated a sense of frustration with the organization around the issue of standardized templates, which suggested that employee involvement at the ground level is not practiced to the degree expected. Three participants in particular, P07, P10, and P19, clearly showed that there were differences in how standardization processes were set-up, maintained, neglected, and understood. One participant, P07, was in the Administrative Support Staff age group 45-54, while the other two participants, P10 and P19 were both Managers in the 55-64 age group. P07 suggested that sometimes there was an overload of information on templates with organizational jargon, which could be simplified for specific tasks. The participant provided his/her insights into resolving the issue, "I can put in only the relevant information - it's not 'muddied' up with useless crap. I can put it in English - not technical terms that mean nothing to me" (6B, P07, AS4/45-54).

P10 and P19 raised concerns about policy, procedures, and changes to standards and templates. P10 was frustrated with how systems and process "change FREQUENTLY [participant emphasis] usually without explanation or any notification" (Q6B, P10, M5/55-64). Another comment was about financial processes, which are "a nightmare that continually change and evolve. Very time consuming and leads to enormous amounts of time being spent trying to actually accomplish successful issues that are or should be routine" (Q6, P10). The participant had concerns about pitfalls of standardization that he/she felt were impacting their organization. If standardization was supposed to increase efficiencies, the participant through their personal

experience, had not found it helpful due to what they felt were vague parameters and frequency of change with the templates and other standardized documents.

The other participant, P19, was concerned about interpretations of policy and procedures. Creation of one's own day-to-day business process templates, cheat sheets, or reference documents is usually based on a master template or created for a customized use. The following comment discussed some possible political and controversial issues within the organization. A Manager had some experiences that caused him/her to struggle with the Faculty of Extension policies with respect to semantics and intention of processes.

> Some of the Faculty of Extension specific policies and procedures don't make pragmatic sense. Also, some of them are not what the UAlberta central policies would outline. We have some instances where Extension administration has made their own interpretations of the university's procedures or guidelines (Q6B, P19, M6/55-64).

Standardized templates and business processes, depending on the creation and purpose for the process, could have impacts after implementation, especially if the primary users were not consulted. The participants expressed their angst about processes that were not clearly stated, being interpreted in different ways, and about the fact that organizational policies and procedures sometimes do not cover all options.

The views of the last three participants contrast greatly with those participants who needed to create their own templates because none existed for their use; therefore, no previous interpretations or precedent documents were available to use as templates. For example, one Administrative Support Staff, in the age group 35-44, indicated that "the job we do is quite

unique and there are no industry templates, and no one else in the Faculty does what we do, so I couldn't use any of their templates" (Q6B, P03/AS3). A Researcher, in the age group 45-54, also had similar comments, "often they need to be customized to our unit's needs, or they do not exist" (Q6B, P04/R4).

7. Finding out about Changes and New Procedures

Question 7:	*If there are changes or new procedures to follow, how do you usually find out about them?*

The study found an overwhelming unanimous agreement amongst participants regarding how changes and procedures were communicated. In total, 40 out of 41 participants selected the email response, as how they usually find out about changes or new procedures to follow. No other response rate matched this statistic in this study. Table 7 displays the results.

Similar to Question 4, the responses were a mix of selections between human interaction and virtual technology. Although email was the preferred choice and probably the easiest within an organization for mass communication, human interaction was still quite important. Human interaction response 7.8 – "Conversations with a co-worker," had a large result (n = 27). Some of the responses could be in both human interaction and virtual technology. For example, response 7.6 – "Through in-house training," could have human interaction in the form of teaching by a co-worker or external contractor who used multimedia presentations. The 'other' comments included an almost equal mix of human interaction and virtual technology categories.

Finding out about Changes and New Procedures Response Choices	Total	Human Interaction (HI) or Virtual Technology (VT)
7.1 Email	40	VT
7.8 Conversations with a co-worker	27	HI
7.5 At a staff meeting	23	HI
7.3 Check the University of Alberta Website	10	VT
7.6 Through in-house training	6	HI and/or VT
7.7 In the staff room	4	HI
7.2 Check 'The Lantern'	2	VT
7.4 Check the Faculty of Extension Website	1	VT
7.9 Other	5	HI and/or VT
Missing	0	
Total number of responses:	86	
Total number of participants (n = 40)		

Table 7: Finding out about Changes or New Procedures and a Comparison of the Classification of Response Choices as Human Interaction verses Virtual Technology

8. Workplace Morale

Question 8: *Change in procedures can sometimes affect workplace morale. Describe a situation that affected you. To maintain anonymity, please describe in a way that will not identify you or other co-workers. Try to describe it in general terms as possible to show your example of the situation. If this does not apply to you, leave this section blank.*

Figure 8: Workplace Morale Word Cloud

The word cloud in Figure 8 illustrates some of the words used by the participants from their answers to this question. Open-ended questions in a questionnaire carry a risk of participants identifying themselves or other co-workers when describing personal experiences.

Participants were reminded in the question to describe their experiences in general terms. Overall, participants respected their co-workers anonymity; however, one participant (P10, AS4/45-54) mentioned a position title, but kept all actual names anonymous. The total number of situation responses (n = 25) was greater than no situations provided (n = 16).

Similar to Question 6B, the open-ended responses were analyzed using context units of thematic, syntactical, and categorical distinctions. Five themes emerged from the responses: business processes, budget, travel, training, and technical support. Within the business process theme, three specific categories were created to fit into the morale descriptions. The categories are listed in Table 8. The study found that the participants had very similar attitudes toward business process changes and input from users and communication to users.

Themes from Changes in Procedures that Affected Workplace Morale	**Total**
Business process changes	17
Business process change input and concerns for users and communication to users	12
Lack of change – need processes	5
IT (technical support)	4
Budgeting	3
Training with new business processes	3
Travel procedures/costs	2
Total number of responses:	46
Total number of participants (n = 25)	

Table 8: Themes as Described by Participants from Changes in Procedures Affecting Workplace Morale

Participants provided both general and specific business processes situations in which their workplace morale had been affected. Feelings of frustration permeated the descriptions of many situations described by participants.

One of the systems participants referenced was Campus Solutions, which is the current registration system at the University of Alberta. The software that runs Campus Solutions is PeopleSoft, which is also used interchangeably with Campus Solutions. The Faculty of Extension merged into Campus Solutions on April 4, 2011 (Faculty of Extension, 2002-2012f), with some customizations due to some operational differences between the Faculty and the Main University Campus processes. The Faculty of Extension requires payment for courses at the time of registration, while main campus operates with payment of tuition at a specific period into the term. With the implementation of new software, registration processes changed along with other business processes, duties, and responsibilities. "The idea of technology [or new software application] also carries associations to human development. In this respect, it can evoke strong and decidedly different emotions" (Hatch, 2011, p. 41). For example, one participant described how he/she felt during the implementation of PeopleSoft.

> The shift to PeopleSoft and the initial confusion of who could do what and accessing information that in the past was easily accessible was hard. It took a while before things were running smoothly and a lot of frustration was experienced during that time (Q8, P31, ASE1/EAS1/45-54).

The change beyond the software platform also affected other participants during implementation. One participant voiced concerns about ripple effects as a result of using a different system.

"Harmonization with central registration significantly changed annual deadlines creating transitional stress and negatively impacted morale" (Q8, P14, AS5/55-64).

Another system–central filing–was mentioned by one participant. No elaboration was provided; however, the impact of the change must have been significant due to the diction choice of the participant. "One big fiasco was the switch to the new filing system [Records Management System]" (Q8, P27, AS5/55-64).

Processes that do not change was another theme causing frustration among participants. Short and eloquently stated, one participant expressed his/her concern that "in any case [it] is the lack of change (not adding some procedures that we need added ASAP) [that] has gotten me frustrated" (Q8, P03, AS3/35-44). Another participant had strong feelings about processes not changing and the time spent working on recommendations that never came to fruition.

> My concern relates to policy and procedure documents that have been reviewed but never formally changed. A lot of hard work and time has gone into the review and recommendations; however, the documents remain as "draft documents" and hence, the recommendations are not formally implemented. As a result there seems to be some confusion about what is policy and what is not policy (Q8, P18, M5/55-64)

The addition of communication breakdown to the changing or non-changing of processes was a frustration expressed by one of the participants, a Researcher. "There appear to be frequent changes to procedures that are not communicated well - from central university as well as faculty administrators" (Q8, P16, R4/45-54).

Effective use of time and procedures was another source of frustration for participants. Three participants expressed extreme frustration because work needed to be redone due to new procedures or the wrong version of a required document being in the wrong location. A Temporary employee, P33, provided a third party perspective, and further illustrated how vital effective communication and location of procedures are within an organization. "It's frustrating to have completed a time-consuming task just to be told that it must be redone due to a new procedure" (Q8, P33, T3/35-44)." A Manager, P41, had a very similar experience, except the consequences were more severe. Instructions were given to the Manager to locate a document on the Intranet ('The Lantern') to perform a specific task.

> I found something, spent many, many hours on the project only to be chastised at a meeting because it was not the format currently being used!! Of course - the newer template and process were not on the Lantern - no one had updated the information or removed the out of date [version] (Q8, P41, M5/55-64).

The third participant, an Educator, P12, had a very similar experience to P41; however, several *procedures* made the issue complex: creating a new process, a plan, and communication style.

> A request for a new process was received and the preparatory work was undertaken, meetings were held with representatives of a unit that would be providing services, and a plan was put in place to brief the highly placed individual who had made the original request. The morning of that meeting an e-mail to FOE [Faculty of Extension] staff came out in which certain changes were announced. One of those changes made studying the

> pros and cons of introducing a new process null and void. Plans were aborted (Q8, P12, E6/65 and over).

All three situations provided examples how muddled process affected not only morale, but also time management, and increased stress, with a decrease in productivity and efficiency within each participant job role.

Frustration through non-existent or low employee involvement, IT, training, budgeting, and travel were other major themes present in participants' comments. Campus Solutions surfaced again in terms of non-existent or low employee involvement and implementation issues. One participant stated that training was provided too early in advance, and was not useful in terms of retaining the knowledge when the actual implementation was completed.

> MISLL [previous registration system] to Campus Solutions/PeopleSoft - training was given LONG before implementation (useless) - people kept insisting it was "SO MUCH BETTER" [participant emphasis] - when in fact the people actually working with it said otherwise - when confronted with this - the people in the implementation department ignored the very valid concerns/complaints (Q8, P07, AS4/45-54).

A Manager had a similar feeling of his/her voice not being heard through the process change, "I felt (along with many members of the team) that the changes weren't negotiated with us...we were told how things would be" (Q8, P15, M3/35-44). On the other hand, one participant voiced concerns of an overabundance of procedures, which could prevent work from being completed. "Too many procedures get in the way of doing work sometimes" (Q8, P32, ASO1/OAS1/45-54).

Several issues with IT surfaced, which were mostly about the centralization of the IT department moving from the Faculty of Extension to the Academic Information and Communication Technologies (AICT) department. A Manager voiced his/her objections about employee involvement, changes to IT service that had inefficiencies and ineffective uses of time, and how huge an impact it had on morale. “Huge feelings of resentment were generated because the IT team were all well liked and very much a part of the Faculty's "family" and our team” (Q8, P10, M5/55-64). Another participant, in a different job role and age group, a Researcher 65 and over, had similar views about the impact and service for the employees at the Faculty of Extension. “The change requires us to make an appointment with a tech[nical] person for help with a computer problem. It was much quicker to phone them or speak with them in person and the issue would be resolved” (Q8, P20, R6/65 and over). Another change with IT that was the University-wide switch to Google. “People were very frustrated and upset as it was not user friendly and the training we were provided was not sufficient” (Q8, P08, ASO1/OAS1/45-54). No other views of the change to Google were provided in the comments, and therefore, no generalizations about Google could be made conclusively.

A few issues pertaining to budgeting and travel seemed to have lingering impacts on morale. For example “[t]he idea of coming into a year starting the budget at zero is so demoralizing when you are trying to plan ahead” (P05, B2/25-34) and “interpretation of what constitutes an 'external audience' for hosting purposes is difficult to pin down” (Q8, P19, M5/55-64).” There were not enough sufficient comments provided on budgeting issues to determine a more general summary of participants’ feelings; however, it seemed that interpretation of polices was a core concern. Another issue regarding interpretation of policies and justifications of job

duties had an impact on a participant in terms of their job duties and responsibilities. The participant stated that "The Faculty refusing to cover certain travel costs necessary to do my job" affected their morale (Q8, P05/25-34).

This study found that the number of participants (n = 16) who did not provide descriptions of situations that affected their morale provided a compelling result – the power of silence. Participants in the workplace usually experience different situations, and it was possible that some did not have any experiences to share for the question. On the other hand, the study noted that there could be other reasons of why participants chose not to answer the question. A follow-up 'check all that apply' question asking 'why participants did not want to provide an example of a situation' would have provided more data for analysis for non-responses.

9. State of Workplace Morale

Question 9:	*At this time, on a scale of 1 to 5 (1 = High, 5 = Low), what is the state of your workplace morale in terms of overlooked or excluded procedures that you do day-to-day?*

Responses were selected by using a Likert scale. The number of responses for each category is illustrated in Figure 9. No particular job role dominated the response selections; however, age may have been a factor. In the highest response category, 'Satisfactory (doing ok)' (n = 21), the two largest age groups were 45-54 (n = 8) and 55-64 (n = 7), while the other age group categories had lower responses.

In particular, the two largest age groups also had the same job role, administrative support staff. In the second highest response category, 'Somewhat High (n = 11) there were two

age groups that had similar results, 35-44 (n = 3) and 45-54 (n = 4). The third highest category, 'Somewhat Low' (n = 5) had no dominant age groups. Similar to the same job roles by participants in the 'Satisfactory (doing ok)' category, the two participants in the 'Low' category had similar job roles, manager/researcher and manager, but different age groups, 35-44 and 44-54, respectively. Refer to Appendix O for the specific age group and responses selections.

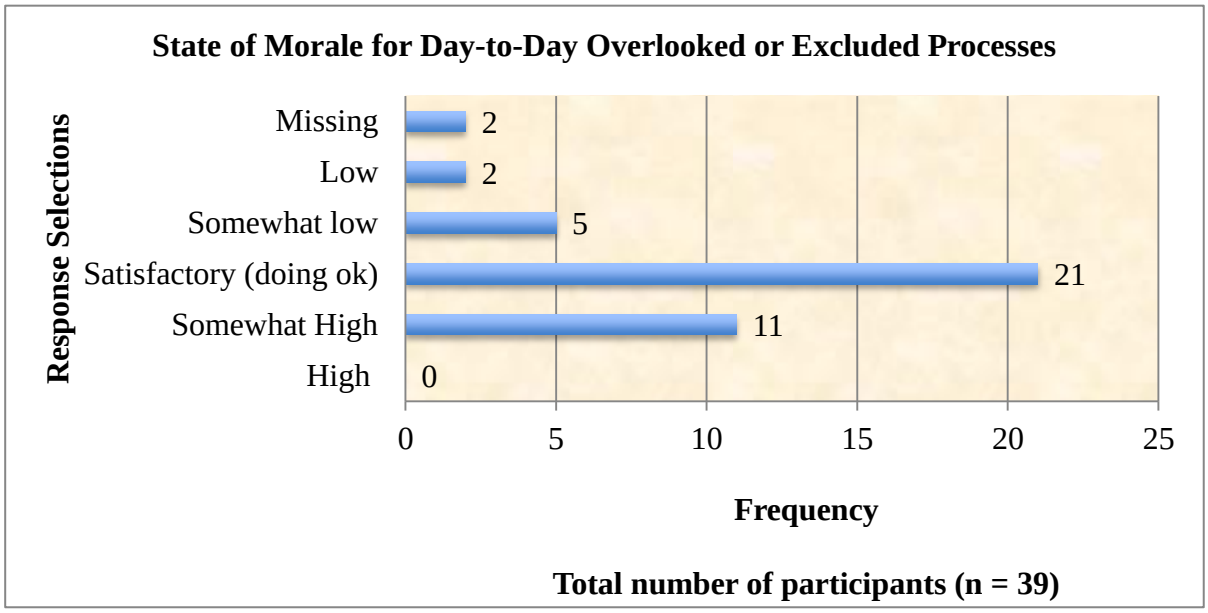

Figure 9: State of Morale for Day-to-Day Overlooked or Excluded Processes Participant Response Selection Frequencies

10. Procedural Information via Email

Question 10: If procedure information (new or changes) is sent via email, what do you do with the information?

Most of the participants selected the first response, 10.1 – "Keep in your email" (n = 34 out of 41). The second response, 10.2 – "Put in an electronic folder outside your email box," received the next highest response (n = 17). The second preferred selection was exactly

half of the first selection. The same analysis was used as the other 'check all that apply' Questions, 3, 5, and 7. The study found when comparing electronic (n = 52) and print (n = 25) options, that electronic storage was the preferred choice. The results are shown in Table 9.

Participant Response Choices for Decisions after Procedure Information is Send via Email	**Total**	**Electronic (E) or Print (P)**
10.1 Keep in your email	34	E
10.2 Put it in an electronic folder outside your email box	17	E
10.3 Print it off, and put in a folder/binder that you created	14	P
10.5 Print it out, and post it in your work station	10	P
10.4 Delete it	2	E
10.6 Other	5	E and/or P
Missing	0	N/A
Total number of responses:	82	
Total number of participants (n = 34)		

Table 9: What Participants do with Procedure Information that is sent via Email and a Comparison of Electronic verses Print Options

The 'other' comments participants provided came from three administrative support staff (AS3/35-44, AS4/45-54, and AS5/55-64) and two managers (M3/35-44 and M5/55-64). Two administrative support staff members, P07 (AS4/45-54) and P29 (AS5/55-64), both indicated that they re-created the email information for their own purposes, similar to Question 6B. P07 (AS4/45-54) comments have been consistent throughout the study. For example, P07's comments from Question 6B regarding reasons for creating their own templates and for Question 10 regarding procedural information are similar in content. For Question 6B it was, "I can put in only the relevant information - it's not 'muddied' up with useless crap. I can put it in English - not technical terms that mean nothing to me," (Q6B) and for Question 10 the comments were, "Then I re-type it so it makes sense to me with only what really works and what I specifically

need" (Q10). Again, there was a reoccurring theme for P07, who persisted in reiterating his/her thoughts about user input and efficiencies of processes for productivity.

P29 also related his/her comment from Question 10 to Question 6B, stating that he/she "[r]evamp [their] personal template." A Manager, P19 (M5/55-64), and Administrative Support Staff, P37 (AS3/35-44), both noted that they would share the information with other staff members depending what the email contained.

11. Documentation and Standardization

Question 11:	*Sometimes procedures are overlooked or excluded from being documented or standardized, existing only in the 'Organizational Memory.' Please describe any procedures that you would like documented and/or standardized for you to use in your job.*

Question 11 was designed to provide feedback in the form of a business process and knowledge management audit. Out of the 41 participants, 21 responded, and provided detailed suggestions (n = 33) of what they wanted documented and standardized, which would assist them with their day-to-day job duties. Participants who did not provide any suggestions (n = 20), proceeded to Question 12. The categories are in Figure 10. The figure design was designed to be circular because this audit step was all inclusive and crossed job role and responsibility boundaries.

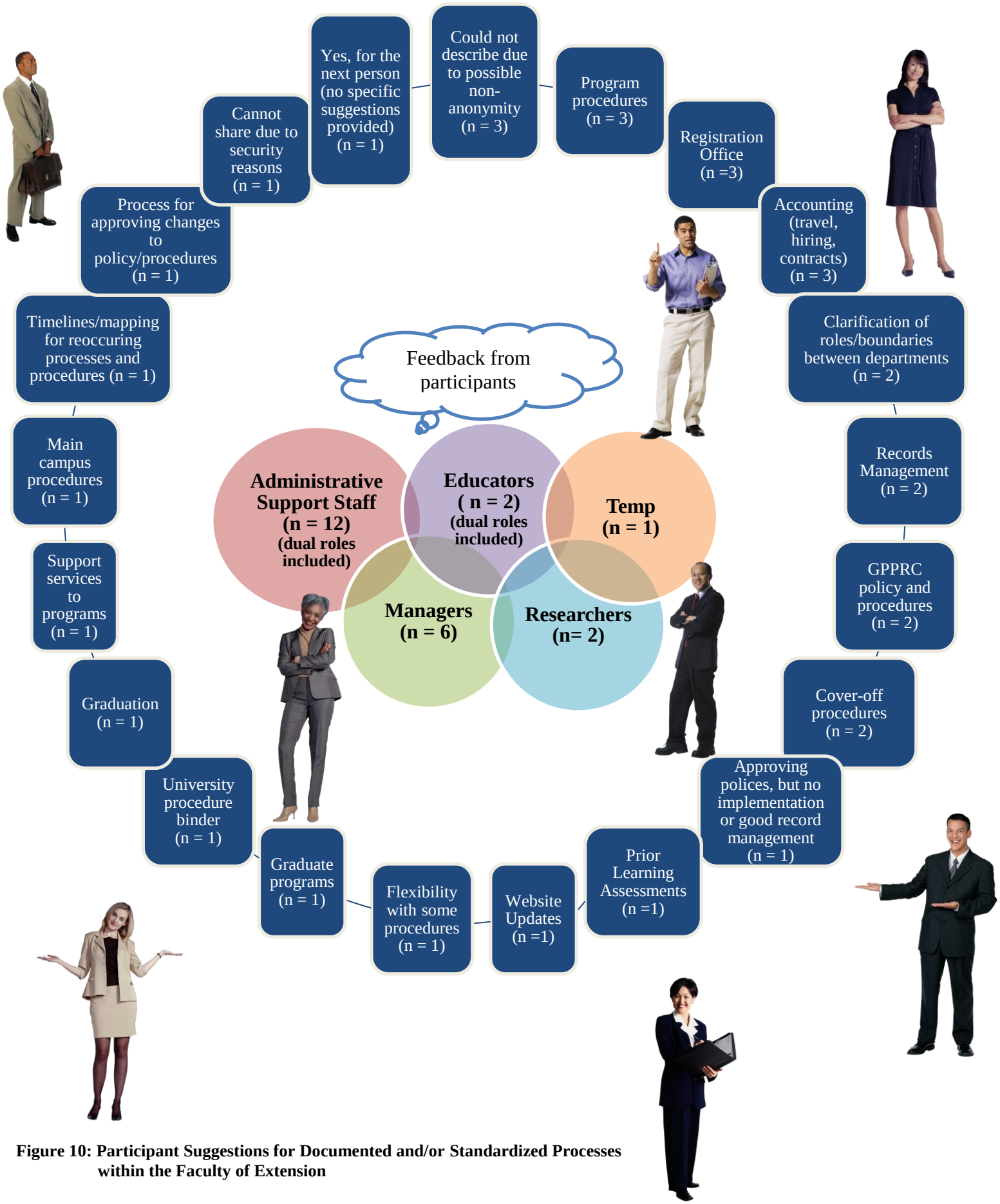

Figure 10: Participant Suggestions for Documented and/or Standardized Processes within the Faculty of Extension

Participants were generous with their suggestions, and seemed ready to provide feedback within an anonymous environment. Some participants did not provide suggestions as they thought the feedback would be too specific, and possibly would identify themselves. Business Process Management requires ideas and feedback for improvement, and then with those ideas, the process diagrams could be created. Most suggestions were described with two or more sentences, a bullet or numbered list, strong diction selections, and in some cases, examples of why they were making a suggestion. Participants' suggestions ranged in number from one to eight, with one Manager (P15, M3/35-44) providing eight specific suggestions. On average there were 2.5 suggestions per participant.

The study found three prevalent themes that emerged from the participant responses. The first theme concerned basic day-to-day operation procedures, how to do them, or where to find the process information. Secondly, boundaries between departments working and coordinating processes together was a concern, and third, the practice of process "follow through" and implementation.

A basic day-to-day operation example about undocumented processes given by a participant was requesting a standard procedure when one employee needs to cover the work of another or when a supervisor was away from the office. Questions asked by participants were, "[w]ho is next in line as a decision maker? Who has signing authority? That kind of thing" (Q11, P22, AS3/35-44).

One of the participants provided an overview suggesting an easy solution to process issues - a comment on the process of the process. "[What we need is a] simple procedure, for the

faculty, on the process of approving changes to or new policy or procedures" (Q11, P40, AS4/45-54).

Frustration, similar to that within the responses Question 8 on morale, was seemingly present in the tone of suggestions from some participants. Two participants expressed their stress level and frustration describing two separate issues; however, each situation had a similar outcome. For example, P10 (M5/55-64), stated "the result was confusion and "ruffled feathers" bordering on mutiny! At no time has a new policy or procedures statement been issued clarifying the roles and responsibilities [between the two departments working together]" (Q11). The situation described by P10 also had suggestions of boundary and turf issues, similar to those described in Lee and Dale's (1998) study. While P21 (AS4/45-54) commented "[s]ome stuff that used to be in the old University procedures binder. Not relevant today and outdated. Stuff that leads to a wild goose chase to various departments" (Q11).

One participant suggested that there were already too many procedures to follow, a similar finding to Lee and Dale (1998) and McAdam and Donaghy's (1999) studies. "I think I have enough procedures to follow and sometimes ignore. When it comes down to providing support [for departments, instructors, etc], flexibility has to be considered" (Q11, P32, ASO1/OAS1/45-54). Another participant suggested that the opposite was actually true, commenting that "all of them [all standard procedures should be documented] :)" needed some documentation and standardization (Q11, P33, T3/35-44).

Defining the process, knowing the process, following up, and implementing processes were also referenced in many of the participants' suggestions. There was one process committee, General Program Policy and Review Committee (GPPRC) that received specific comments.

> Work is underway to revise GPPRC Policy and Procedures, standardize course/program change requests, and a guide creation of course descriptions for example. The problem in the past has been that policies were approved, but not implemented, records could not be located that supported a policy change. (e.g., disparity between GFC policy and FOE [Faculty of Extension] practice regarding approval and implementation of citation programs) (Q11, P12, E6/65 and over).

> I think that the GPPRC policy guide needs to be reviewed and reorganized. In my view some of the policies are not distinct from procedures. If they were separated out it would make the review and change processes clear (i.e., if there are changes to policies they can go through the necessary approval steps; procedures can be discussed and changed with input from the appropriate stakeholder groups) (Q11, P18, M5/55-64).

Other participants also referred to processes and procedures for programming changes, approval processes, and how to proceed to the implementation stage. For the complete list of suggestions for documentation and standardization, refer to Appendix O.

12. Knowledge Bank

Question 12: *A knowledge bank is a list of experts in your organization who are knowledgeable in a specific area and know how to complete certain procedures. Do you have this resource available to you?*

Some examples include: Marketing expertise, proof readings team across units, list of professor expertise, subject matter experts, outside educators, instructional design, etc.

If 'yes,' continue to Question 13.
If 'no,' answer Question 12B.

Question 12B: Where are the knowledge banks located?

Out of the 40 participants, there was a split decision if knowledge banks existed as a resource: 20 responded 'yes' that knowledge banks existed and 20 responded that 'no' knowledge banks did not exist, while one participant did not respond at all. Those participants that responded 'yes,' were asked a follow-up question, Question 12B, that would explore where the knowledge lists were located. Two participants who responded 'yes' did not provide any reasons in the follow-up question. The results of where knowledge banks exist within the Faculty of Extension are shown in Table 10.

Response categories 12B.1 – "In an electronic folder you created" and 12B.2 – "In shared electronic folders for the Faculty of Extension" had a tie for the number of responses (n = 7). The 'other' comments (n = 9) had consistency between the participants' responses. Two participants referenced electronic Internet sources: Faculty of Extension and University of Alberta websites (Q12B, P25, R4/45-54 and P37 AS3/35-44). Another two participants used the University of Alberta Google Apps contact list and Google Docs (Q12B, P29, AS5/55-64 and P32 ASO1/OAS1/ 45-54). The remaining 'other' responses regarding banks of knowledge were from

tacit knowledge, informal knowledge, and as one participant simply put, "in my head" (P19, M5/55-64).

Knowledge Bank Location Choices	Total	Electronic (E) or Print (P)
12B.1 In an electronic folder you created	7	E
12B.2 In shared electronic folders for the Faculty of Extension	7	E
12B.6 Printed out for easy reference use	4	P
12B.4 Posted on "The Lantern" (Faculty of Extension Intranet)	3	E
12B.7 Stored in department electronic folders	3	E
12B.3 Posted up around the workplace	2	P
12B.5 Posted in your work space	1	N/A
12B.8 Other	9	E and P
Missing	2	
Total number of responses:	58	
Total number of participants (n = 20)		

Table 10: Locations of Knowledge Bank Lists and a Comparison of Electronic or Print Options

Unlike previous questions that compared electronic and printing preferences, participants responding to Question 12B predominantly had an electronic preference. Two of the 'other' comments indicated a preference for human interaction communication.

13. Knowledge Management Systems

Question 13: *Standard procedure documents (instructions or manuals) exist for most knowledge management systems on how to use these systems. What is your opinion about these instructions or manuals?*

For example, are they useful, unhelpful, do not exist in the organization, it depends – some are useful, while others are not, or other reasons.

Question 13 was structured as an open-ended opinion response, and out of a total of 41 participants, 34 provided opinions. The responses were analyzed using context units of categorical and thematic distinctions. The categories are listed in Table 11.

Knowledge Management System Attributes Categories	Total
Useful/helpful	29
Need to be kept up-to-date	11
Not useful if out dated or not maintained	5
Encourage staff to use them	5
Provided specific systems or manuals	5
Provided location of manuals	2
Not always useful/helpful	2
No knowledge of any resources available	2
Not applicable to my job responsibilities	2
Provided a definition	2
No access to any	1
Good for new employees	2
Total number of responses:	66
Total number of participants (n = 34)	

Table 11: Knowledge Management System Positive and Negative Attributes Categories from Participants

The attitude of participants was generally positive and indicated that standard procedure documents (instructions and manuals) were useful and helpful (n = 29 out of 34). One participant had an interesting way of expressing his/her opinion, “Dare I say indispensable?” (Q13, P29, AS5/55-64. Two participants within the same age group 45-55 (P22/AS4 and P23/R4) provided their opinions of what constituted standardized documents, which when combined together formed an informative definition.

> Standard procedure documents are very important to an organization. They instruct how procedures are to be carried out and this leaves little room for misunderstanding the reason or need for the procedure. (Q13, P22) Although creating such documents and keeping them up-to-date require staff time and energy, these activities are important. Such documents become shared points of reference for an organization and its units (Q13, P23).

The definition references key terms and concepts relating to standardization, and the value of employee time and expertise (explicit and tacit knowledge and organizational memory).

Out of 66 responses, 29 stated in some way in their responses that in order for standardized documents to be useful, helpful, and assist with their job duties, it was highly important for the resources to be kept up-to-date. P37 (Q13, AS3/35-44) provided a useful suggestion on how to keep manuals up-to-date, "I find the instructions or manuals most useful when they include a date of reference for the *last update* [emphasis from participant]." Another participant added, "I also believe that they are a lot more valuable when a relatable example, within the context of the Faculty of Extension, is incorporated" (Q13, P38, AS1/18-24). Participants strongly suggested that manuals were useful only if they were user friendly, easy to understand, and contained relevant information. For example, one Manager summed up the general opinions of many of the participants by stating, "Manuals can be helpful, but sometimes, because they are not properly written or organized, they can also be a bit of a hindrance" (Q13, P01, M2/25-34). The style and language of a manual has implications regarding its use within the organization. P40 reiterated the importance of diction as "they [manuals] are helpful if written in plain English not having them read like an ACT [participant emphasis]" (Q13, AS4/45-54).

Five participants also suggested that employees should be encouraged to use the resources if they were available. One Manager stated, "[i]t is my opinion that manuals can be helpful but only IF [emphasis from participant] the entire organization recognizes the authority of the manual and that staff are expected to operate according to prescribed processes outlined in the manual" (Q13, M5/55-64). Another participant, an Educator commented, "[e]lectronic

resources are preferable as updating can be accomplished more easily. Providing everyone is strongly encouraged to consult the latest version and given the location that type of system can work well" (Q13, E6/65 and over).

Another five participants provided names of systems that either had or did not have manuals, and were split between three Administrative Support Staff (AS3/35-44, n = 2; AS4/45-54, n =1) and two Managers (M3/35-44 and M5/55-64). The systems and existing or non-existing manuals are listed in Table 12. Various opinions were provided in terms of how good or bad documentation was, if there was any, and what was useful. P15 provided the most number of examples of systems/manuals (n = 5), and made biting comments about two systems. For example, "[t]he records management [central filing system] database has nothing - it's a mystery!" and "The Lantern – meh" (Q13, P15, AS3/35-44). The same participant also had the highest number of suggestions for procedures to be documented from Question 11's open-ended response.

Name of System/Manual	**Manual Exists: Yes or No**
Campus Solutions/UPK Modules	Yes (n = 3)
PeopleSoft Financials	Yes (n = 2)
Instructor Manual	Yes (n = 2)
MISLL [previous Registration system]	Yes (n =1)
Records Management [central filing system]	No (n = 1)
University of Alberta Website	Yes, for the purposes of Information on the website (n = 1)
University's Central Policies **Web**site	Yes, for the purposes of Information on the website (n = 1)
'The Lantern'	Did not state (n = 2)
Total number of responses:	13
Total number of participants who provided data (n = 5)	

Table 12: Names of Knowledge Management Systems or Manuals Described by Participants and Corresponding Results for Existing or Non-Existing Operating Manuals

Lack of knowledge about the existence of standard documents or not knowing where to access them was a source of frustration to participants, similar to the frustration expressed in Question 8 regarding morale and procedures. P05 stated, "I have basically zero knowledge of them and do not encounter them regularly in my position" (Q13, B2/25-34). Another participant had a similar opinion, except the emphasis was on access issues: "I can't say since I haven't used them because for the most part I don't have access to them" (Q13, ASE1/EAS1/45-54). There was a gulf between some of the participants who were aware that standardized documents existed, and those that expressed frustration with the process of locating and using standardized documents. One Manager's frustration was apparent with his/her example from one experience creating standardized documents.

> The Faculty of Extension does not have or utilize manuals. Attempts have been made in various units to address this gap - mostly unsuccessfully due to the culture of "ever changing" priorities and ways of carrying out tasks (Q13, M5/55-64).

Being knowledgeable about standardized documents also affected newly hired and temporary employees within the organization. Comments about having these important resources for newly hired and temporary employees to assist with job duties was an important concern for participants P30 (M2/45-54), P17 (AS4/45-54), and P33 (T3/35-44).

14. Productivity

Question 14:	*Productivity may sometimes be affected if procedures are not clearly defined when working on a team project. Has this happened to you?* *If 'no,' continue to Question 15.* *If 'yes,' answer Question 14B.*

Question 14B: Please describe how your productivity was affected. To maintain anonymity, please describe in a way that will not identify you or other co-workers. Try to describe it in general terms as possible to show your example of the situation.

Out of 41 participants, 31 responded that their productivity had indeed been affected by procedures not clearly defined when they were working on a team project. Table 13 displays the themes from the productivity descriptions provided by participants. The top two reasons participants provided why their productivity was affected when procedures were not clearly defined working on a team project were associated with: time (n = 15) and roles, duties, and responsibilities (n = 8). Time was intertwined in some capacity with all other reasons provided. Frustration was evident within the responses, similar to Question 8 on morale and Question 11 on documentation and standardized documents. Participants provided their own assessments on the institutional processes, and in some cases provided suggestions for improvements.

Reasons Associated with Affecting Employee Productivity	**Total**
Time	15
Roles, duties, and responsibilities	9
Lack of standards	5
Extra work due to lack of/poor standards	5
Knowledge of project history, current processes, duties	4
Interpretation of communication and decision-making	4
Duplication of work	3
Participant indicated to see answer from a previous question	2
None provided, but stated productivity was affected	1
Total number of responses:	48
Total number of participants (n = 31)	

Table 13: Reasons that Affected Employee Productivity When Procedures were Not Clearly Defined When Working on a Team Project Provided by Participants

Wasted time was a key concern to many participants. Too much time was wasted looking for standard procedures or redoing the work, as a result of the lack of procedures or poorly organized procedures. For example, a Manager stated that a "significant amount of time and resources was spent looking for direction, Faculty documents, UAPPOL, GFC and EFC...what should have been relatively easy and taking maybe 2-3 hours took over a week" (Q14B, P15, M3/35-44). Another participant, an Educator/Researcher in a different age group had a similar experience, and "spent way too long looking for a policy" (Q14B, P36, RE1/ER1/55-64). A third example reiterated comments from the other two participants. This participant was in an Administrative Support Staff job role and also in a different age group.

> Generally, I've just spent way too much time trying to determine the appropriate course of action especially when I first started, and still to this day. This could have been easily avoided or decreased with the help of an orientation or reference documents (Q14B, P38, AS1/18-24).

Age of participants did not seem to be a factor, as participants from all different age groups described similar situations.

The study found that timelines were another issue, and again, age, did not seem to be a significant factor. P17 raised pertinent issues on this topic.

> It is important to state the timeline for completing a project at the start before individuals commit to participate. Without full disclosure of the expectations, it can create many problems staying on track to meet deadlines as well a considerable stress. Knowing the deadlines at the start makes it possible to take other projects and commitments as well as

> planned absences (i.e. conference, vacation) into account. Having a surprise deadline has an impact on productivity in all the other areas of a person's work (Q14B, AS4/45-54).

Two other participants provided suggestions for timeline situations that they experienced. "Reminders regarding deadlines sent to staff ON [participant emphasis] the day that certain documents are due. This should be done at least a few weeks prior...." (Q14B, P35, AS5/55-64). The other participant, P22 (AS3/35-44) described a situation where their unit has some control issues for projects. P22 suggested that allowing some other members to be a lead on a project would help on timeline issues, and "allow others the experience of heading up something of this nature, plus the added bonus of having someone else in charge who has more time to dedicate to the timeline/deadline" (Q14B, P22).

The lack of identification and clarifications of roles, duties, and responsibilities was significant for participants. "When areas of responsibility are not defined, some important tasks slip through" (Q14B, P27, AS5/55-64). Two participants used the same term, *ambiguous,* in their example of when job roles were described. These two participants were in different job roles and age groups – P3, an Administrative Support Staff (AS3/35-34) and P25, a Researcher (R4/45-54). Other participants also described situations where roles were not defined initially in the project or were actually unknown, resulting in decreased productivity and increased work. One Manager expressed concerns over protocol and how this lack of reporting structure would impact the rest of the project. Robust diction choice was used for descriptors such as failure and rectified.

> A procedure that needed to be carried out by another member of the team wasn't carried out because that team member was unaware of their role in the protocol and how their

> failure to carry out the tasks would affect the other pieces of the project. It was rectified once the failure was discovered, and the employee learned from the experience (Q14B, P01, M2/25-34).

Another important component of the situation described above was a reference to learning from the experience: the employee had a tacit learning experience, from the Manager's point of view.

Duplication of work due to lack of clarity about roles and responsibilities also affected productivity. The administrative support staff job role was the dominant job role for participants providing descriptions. For example, P29 and P32 had similar attitudes and job roles. P29 described a situation where "roles and responsibilities were not clearly outlined. Some work was duplicated and some work was not done until the last minute because it was never defined as a particular person's responsibility" (Q14B, AS5/55-64). Completing work at the last minute related to the timeline issues expressed by other participants.

Productivity was also affected by actual procedures. P32 experienced a situation of duplication of effort, as a result of procedures. "[W]ork being done that is not relevant - productivity slowed because of procedures that were not necessary or useful" (Q14B, OAS1/ASO1/45-54). This comment linked to the previous question's top response that standard procedure documents should be useful. One Manager provided an astute observation following procedures when working with teams.

> When it comes to team work I have been trying to sort out opinion from fact. Based on my experience [it] is more difficult than you might think it should be! Somewhere there

is a balance between the use of formalized tools like a project charter and open ended discussion that does not clearly align to action steps (Q14B, P18, M3/55-65).

The study found again that age was not a factor, and that tacit experience within the workplace provided rich data for analysis.

15. Additional Comments

Question 15: Do you have any further comments about business process/procedures and knowledge management in the Faculty of Extension?

Participants were provided an open-ended response to provide any additional comments on Business Process Management and Knowledge Management within the Faculty of Extension, and 17 took the opportunity to do so. Similar to the other open-ended response questions, the comments were analyzed using context units of categorical, syntactical, and thematic distinctions. The categories are listed in Table 14. Comments were coded in some cases with multiple categories.

The category for process and standardization (n = 11) was based on if the participant mentioned the terms: process, business processes, standards, or procedures. Other categories may have fit into the overall arching category of process and standardization; however, the categories were determined by the specific process, standard, or system described by the participants.

Themes from Additional Comments as Described by Participants	Total
Process and standardization	11
The Lantern	4
Knowledge management/standards of record keeping	4
Human Resource procedures	3
Electronic file management/central filing	2
Organizational memory	2
General comment – 1 thank you; 1 it's a challenge	2
Technology	2
Standard UofA processes verses Faculty of Extension processes	1
Creativity and innovation within processes	1
Divide between professors and rest of staff	1
User input	1
Analyze short falls, save money, and resources	1
Implementation of consequences for those not complying with business processes	1
Total number of responses:	34
Total number of participants (n = 17)	

Table 14: Additional Comments Categories Described by Participants on Business Process Management and Knowledge Management within the Faculty of Extension, University of Alberta

Participants were inordinately frank and open with their comments, which could be classified more as responses received from a business process and knowledge management audit. The participants raised most of the major elements of Business Process Management and Knowledge Management that were explained in the Introduction section. The themes that emerged from the participants were: suggestions for improvements, how decisions from higher management had impacts on actual users, organizational memory issues, standards and importance of electronic filing systems, relevance of procedures, and explicit/tacit knowledge.

Knowledge Management and a standard process for electronic filing were major concerns for the participants. Some participants provided suggestions for the central filing system (Records Management) and electronic filing process and standards in general, while others provided specific examples of systems. As a general theme, participants agreed that a central

place for knowledge was important, for example, 'The Lantern'; however, they maintained that the content required re-organization (Q15, P38, AS3/35-44; P04, R4/45-54; P40, AS4/45-54). One Manager, P39, provided a summary, which reflected similar feelings voiced by other participants.

> I think knowledge management is extremely important. In my view there needs to be a standardized system for collecting the information and ensuring that effective records are kept (i.e., using the same types of headings and formatting). It is difficult to find some information on the Lantern given that some things are organized by date and others by topic (Q15, P39, M5/55-64).

An Educator/Researcher, P36, provided more specific improvements for knowledge management with the system of 'The Lantern,' and mentioned the concepts of tacit and explicit knowledge within the workplace.

> However knowledge management beyond that [PeopleSoft was referenced in the previous sentence of the quote] is almost non-existent. The Lantern is essentially a passive great big filing cabinet. The drawers are badly organized and overstuffed. Much Faculty knowledge never gets anywhere near The Lantern. Most of it is tacit. But even what is explicit never gets captured in useful ways (Q15, RE1/ER1/55-64).

Overall, participants agreed that a system was required to store and retrieve information, document standards and procedures, illustrate consistent and best practices regarding document storage and accesses, and provide easy access to knowledge banks.

Participants expressed frustration with the Faculty's lack of retention of and their lack of access to tacit, explicit, and organizational memory. P33 noted that much of the knowledge about procedures, especially the unspoken and unwritten procedures, was taken for granted, and not documented for new and temporary employees that may need to know or access the information (Q15, P33/35-44). On the other hand, another participant, P32 challenged the process of standardization in terms of a critique that flexibility should also be considered when designing processes, and that service could actually improve.

> There is no process or procedure that would best fit all of the instructors [and staff that] I help. I do my job, and I think I do it well - If I tried to automate my work by following anal retentive procedures and processes, the quality of support would go down. Thank goodness this is anonymous :) (Q15, P32, ASO1/OAS1/45-54).

Anonymity again was important for the participants. Without anonymity, participants may not have provided direct suggestions, and honest responses for their opinions and suggestions. P32 raised an issue that another participant, P18 (M5/55-64) categorized as 'creativity and innovation.' Sometimes within Business Process Management and Knowledge Management, micro management may not be the best design route. P15 also felt "trapped within a lot of rules and procedures" and emphasized the importance of having flexibility in the form of creativity and innovation (Q15, P39, M5/55-64).

P30 (M4/45-54) and P37 (AS3/35-44) heaped harsh judgment upon the institution, expressing a deeper level of frustration than other participants. P30, a Manager himself/herself, criticized upper management's style and attitude toward process. This participant's comments

cannot, of course, be considered representative of other managers. P30 obviously felt comfortable and safe within the anonymous questionnaire to assert his/her concerns. "[A] lot of the tedious tasks can be done by entry level but yet higher level ends up hav[ing] to do it all and no time to plan and develop new business" (Q15, P30). The participant suggests that as a manager, some job responsibilities should be reviewed, so that productivity can be spent in other areas that may bring in more revenue and business.

P37 (AS3/35-44) raised an issue that was unique because it was never mentioned in any area of the study – the consequences for non-compliance with business processes in place. Implementation and follow-up of process has been a re-occurring theme in this study; however, consequences were never mentioned. P37 provided a solution of instituting consequences or repercussions for other employees who continually ignored business processes, actions that that had effects on other areas of the organization. P37 suggested that these consequences "may assist with managing the business processes/procedures and provide a consistent and expected level of customer service to our students" (Q15, P37, AS3/35-44). The participant explained their situation by further indicating that their level of patience, frustration, and productivity was being affected due to business processes not being followed: "[w]e have several staff members who deal directly with our students choosing to circumvent the agreed to business processes/procedures to the detriment of the student experience. This is done despite frequent emails and F2F coaching/requests for compliance." (Q15, P37).

D. Document Analysis

The Faculty of Extension and University of Alberta websites were selected as two of the three sources for secondary data for two purposes. First, both websites were provided as response choices in the questionnaire, and secondly, the websites were a source of external information and knowledge about the institution in the study. The third secondary data source was the internal Intranet, 'The Lantern,' as it was a source available to all employees within the Faculty of Extension. Because the electronic sources were subject to change, the analysis will be written in past and present tense, from the study time frame February – August 2013.

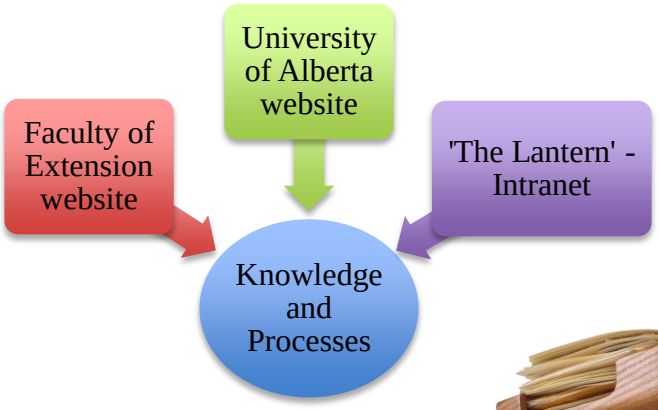

Figure 11: Document Analysis Secondary Data Sources

i. Websites – Faculty of Extension and University of Alberta

The websites were analyzed through links that had specific words and semantic meaning, and any multimedia communications. Because the focus of this study was on the Faculty of Extension, the website for the Faculty of Extension was examined before the University of Alberta website.

The homepage of the Faculty of Extension, left side bar lists Services and Research links. The 'Services' header has three categories: students, instructors, evaluation and research. The 'Research' header links to "areas of expertise" (Faculty of Extension, 2012g) for Institutes, Centres, and Professoriate Directory, all of which could be classified as one type of knowledge

bank within the faculty. There were no other knowledge banks explicitly listed on the website, except for a staff directory.

The 'policy' link (University of Alberta, GFC, 2002-2013) is located at the bottom all website pages, and connects to the University of Alberta Policy Gateway. The Policy Gateway provides search tips and links to the appropriate policies and procedures for the University of Alberta. Also located on each page, is the Intranet link, "The Lantern." The Intranet link directs the user to a University of Alberta authentication page for employees to sign-in. Participants in the study, who responded that he/she did not know where to access the site may not have known that there was a direct access point to 'The Lantern' at the bottom of the Faculty of Extension website.

From a design communications standpoint, the links to University of Alberta polices and the employee Intranet at the bottom of the Faculty of Extension pages may be missed due to the location or font size. An 'employee' category on the Services page does not exist. This absence may cause some accessibility issues for employees attempting to retrieve information about their employment.

The University of Alberta website has a 'policy' link on the bottom of every page. The link navigates to the official University of Alberta Policy and Procedures (UAPPOL) page. UAPPOL "is a central repository in SharePoint for University of Alberta policies and procedures, except for those found in the University Calendar and Staff Agreements" (University of Alberta, UAPPOL, 2002-2013a). The left side bar has two headings that are relevant for this study, 'policies and procedures' and 'policy tool kit.' Under the 'Policies and Procedures' left side bar

tab is an alphabetical listing of all policies and procedure links, and ten categories of policy links: Academic Polices; Advancement Policies; Research Policies; Human Resource Policies; Finance Policies; Administration & Operations Policies; University Relations Policies; Health & Safety Polices; Information Management & Information Technology Policies; and Facilities, Properties & Equipment Policies (University of Alberta, UAPPOL, 2002-2013b). The policy development tool kit is also available for employees, which has three categories: UAPPOL Governance; Guidance for Developers; and Templates and Forms (University of Alberta, UAPPOL, 2002-2013c). Within the tool kit are documents for process re-development guidelines and checklists, and policy and procedure templates. The site is easy to navigate, organized in a logical sequence, and provides supporting documents with checklists and explanations.

ii. Intranet – 'The Lantern'

The Faculty of Extension's Intranet, 'The Lantern,' was using Microsoft SharePoint up to mid-July 2013. This analysis is from the SharePoint site. A new version of 'The Lantern' is in the process of being planned. Figure 12 illustrates the homepage of 'The Lantern.'

The SharePoint Intranet consisted of a header column with three columns below. The header column consisted of ten tabs: Home; Human Resources; Operations; Governance; Marketing; Fund Development; Professoriate; Programming; Academic Planning; and Emergency Procedures.

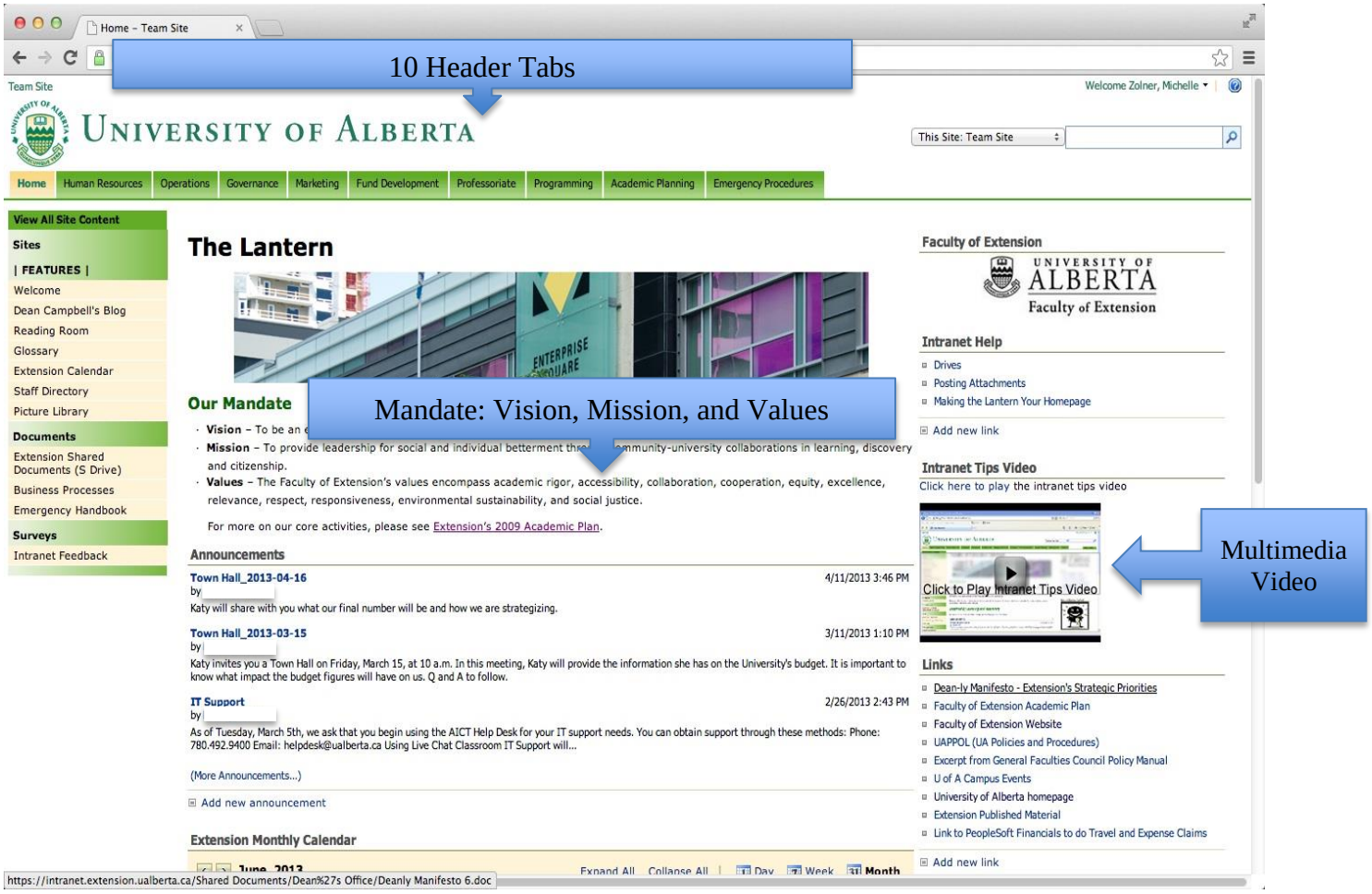

Figure 12: A Screenshot of 'The Lantern' Homepage

The left column menu had three headers: Features, Documents, and Survey links. Under the Features header, a Glossary link listed 38 terms (Faculty of Extension, 2002-2012h). Included within the terms, most notable were: community engagement, Faculty Council, Intranet, knowledge mobilization, scholarship of engagement, and university governance. These terms are part of the Faculty of Extension's mandate of lifelong learning, and also provided some definitions for employees. The definition provided for *Intranet* was "a private computer network, usually organized by a large business or organization. Similar to the Internet, but internal rather than external" (Faculty of Extension, 2002-2012f). From the questionnaire responses in Question

3B1 – "Do not know what it is" (n = 2), the 'Glossary' would have been one area where participants could have found out the definition of an Intranet. If the participant could not find how to access the site, then the above would not apply.

Listed under the Document header, the Business Processes link had three visible three folders: Accounting, Marketing, and RO [Registration Office]. Each folder was empty and had no content at the time the document analysis was completed. To find information on specific business processes, the user needed to click on the Header column instead, and find the appropriate tab where they thought the information and knowledge would be located.

The middle column contained three headings: Our Mandate, Announcements, and Extension Monthly Calendar. The right column also had three headings: Intranet Help, Intranet Tips Video, and Links. The 'Intranet Tips Video' was an excellent overview of the Intranet, with narration and navigation throughout the site. It resides on the right sidebar where it is immediately recognizable and easily accessible. The narrator in the video explained that the Intranet's purpose was to share key documents in a secure environment. This was another information source, other than the Glossary, that explained what an Intranet was and how to use the site. On the far right side bar, there was a 'Links' area that provided links to other Faculty of Extension and University of Alberta resources.

Inquiring why the Intranet tool was not being used in Question 3B from the questionnaire was important from an organizational knowledge management perspective. In their study Benbya, Passiante, and Belbaly (2004) suggest that the

> corporate portal [Intranet] technology if built correctly holds the promise of being the brain of the organization that can equip employees with all the knowledge and vital information required to successfully perform their engagements. The portal tools should be viewed as the mechanisms to augment and interconnect resources so that information can be distributed (p. 211).

Participants' responses from 3B7 – "Cannot find the information I need" (n = 17) and 3B5 – "Have difficulty navigating through the site" (n = 15) showed that the participants found the Intranet's organization layout and design to be problematic. The organization of the Intranet varied from tab to tab, as well as the terminology used throughout the site. There were inconsistencies with file and folder set-up, which may have been the reason some participants were having problems, as indicated responses from Question 3B7 and 3B5. For example, the right column links within each tabbed section had visibility issues. Depending on the user's screen size, some of the more important links, such as 'Policies and Procedures' were cut off and not noticeable without scrolling down the page. From a visual design standpoint, the right side appeared to draw the user's attention first, despite the left side bar also having the same categories. Refer to Appendix P for an example of Operations > Finance tab. Many documents were also buried within folders of folders, making some documents difficult if not impossible to find.

Responses from Question 3 depended on what participants' specific use and resources were required from the Intranet; however, with a knowledge management system, access and finding information should be easy and available for all users. Other major factors such as

maintenance, updating and individual users interpreting the organization of folders differently may have also had impacts on the responses that participants provided.

VI. Discussion

Participants overall valued the importance of Business Process Management and Knowledge Management. This study found that participants were knowledgeable in some areas of Business Process Management and Knowledge Management; however, not all participants had the same level of knowledge about their organization. Standardization generally was viewed positively, but participants thought that room for flexibility was required to effectively complete job duties. The situations described by participants showed that there was an effect on productivity and morale due to overlooked and excluded processes, standardization issues, business processes and management of knowledge.

Anonymity within this research study was vital in order for participants to provide open and candid feedback about their organization. Participants respected the anonymity of their fellow co-workers when providing workplace scenario examples. Some participants were not able to generalize specific situations and stated that their anonymity would be comprised.

A. Communication within an Organization

Communication within organizations is essential, especially for acquiring and transferring knowledge, managing knowledge and knowledge systems, maintaining or creating new business processes, implementing policies and procedures, standardizing processes, maintaining high morale amongst employees, and sustaining good productivity levels. This study showed that both human interaction and virtual technology were rated highly by participants as

communication mediums. But this study also revealed that sometimes the communication channels within those two mediums have interference that affects the receiving and sending of information, thereby affecting the flow of information and knowledge in the form of noise. If there are communication bottlenecks (noise) and content issues, it may be difficult to work productively and morale could be affected.

The physical environment of an organization may affect the communication of the employees (Hatch, 2011; Fleischmann et al., 2012, p. 185). Hatch suggests that "[l]ayout affects the way in which individuals and groups communicate and coordinate their efforts, including formal reporting as well as grapevines and rumour mills" (p. 38). At the Faculty of Extension, close proximity of cubicles, offices, and other departments allow easy access and high levels of human interaction. Employees are able to talk face-to-face, over cubicle walls, within the pod-design cubicle structures in departments, or walk a short distance to the next unit. The majority of offices are on the second floor in Enterprise Square, with two larger units on the main floor of the building, and others on the concourse level.

B. Job Role Comparisons – Managers versus other Job Roles

To provide another level of anonymity within the study, the designated manager job role was not further separated into the various management levels that exist within the Faculty of Extension. As evidenced in the Findings section, many managers had responses and comments similar to those of the administrative support staff. For example, about half of the managers and half of the administrative support staff created their own templates. This trend was repeated when managers and support staff were asked for their opinions on documented and standardized

processes. Managers and support staff also appeared to have similar frustrations regarding processes and morale issues.

C. The Three Audits Within an Organization – Communication, Knowledge, and Process

In this study, participants 'unconsciously' audited themselves and performed their own internal review of their communication management, knowledge management, business processes, and how morale and productivity were affected in their workplace. Throughout the study, participants expressed frustration regarding communication practices, updates, and decisions pertaining to processes and knowledge management within the organization. Three major audit exploratory examinations emerged from the findings of this study: communication, knowledge, and process. Participants in this study, who described frustration, morale, communication, and productivity issues, were similar to the participants mentioned in the Literature Review section, Nwabueze (2012), Lee and Dale (1998), McAdam and O'Hare (1998), and Liebowitz et al. (2000). The studies also referenced communication, knowledge, and process audits in some manner.

1. Communication Audit

A communication audit allows a "far-reaching 'health check' to be made of the organization and its management systems and procedures" (Furnham & Gunter, 1993, p. 204). Communication audits complement knowledge and process audits because of the opportunity for mapping systems and feedback loops with the management of the organization. "Expectations from the audit exercise can be managed and tested through ongoing implementation of feedback loops from testers to tested, and vice versa" (Furnham & Gunter, p. 204). The reference to feedback loops reinforces the design of communication and cybernetic theory applications

importance in Business Process Management and Knowledge Management. Feedback from employees and machines (computers and automated systems), both positive and negative, is the heart of the organization. Noise in the feedback loop can disrupt morale and productivity; however, feedback in general keeps energy and productivity flowing throughout the organization.

Within organizations there are multiple mediums (human interaction, virtual, and multimedia) and "the flow of communication can be upward (lower to higher levels), down (higher to low levels), or across (between employees/units at the same level)" (Furnham & Gunter, 1993, p. 165). This study found that participants described different mediums (human interaction and virtual) and directions of communication flow within the organization. In particular, when participants described why they created their own templates and details of suggested documents/processes for standardization, the directions and flow of communication came from multiple directions. From the participants' comments, a gap may exist in the communication flow between process owners and/or lack of ownerships, and end users, the employees of the processes. In particular, this was evident from the responses described by participants from Question 5 on creating templates, Question 11 on overlooked and excluded procedures for standardization, and Question 13, on instructions/manuals for knowledge management systems and procedure documents.

Participants experienced 'noise' in the form of frustrations on issues concerning process owners, interpretations of communication (email, face-to-face, in meetings), time management, and knowledge management and business processes affecting their morale and productivity. Furnham and Gunter (1993) propose that within an organization, a communications audit can serve to

> [e]xamine communications *effectiveness* [original emphasis], in which consideration is given to the key communication performance areas [or process owners/units] for all employees. Another approach is to assess communications *efficiency* [original emphasis], which concentrates on the use of particular channels of information flow in the management [or process owner] chain (p. 194).

From these two perspectives, a communications audit may provide some assistance for employees within the Faculty of Extension, and strengthen communication within teams working together on Knowledge Management and Business Process Management.

2. Knowledge Audit

This study had three similar findings to a knowledge audit study by Liebowitz et al. (2000). Liebowitz et al. found that participants in their study often did not know where to go to find information and knowledge, who to ask for questions, and a "great deal of wasted time and 'reinventing the wheel' occur[ed]" (p. 8) with employees at the organization. In this study, wasted time also contributed to the participants' frustration when they looked for information, knowledge, and business processes. Wasted time impacted their morale and productivity when they were forced to continually search for information that was not available, up-to-date, or difficult to find.

The second similarity occurred with communication and understanding of duties within different job levels. Liebowitz et al. (2000) noted that communication lines needed improvement between departments, which may be a cultural root issue within the organization (p. 8). This study found that participants struggled with job roles, duties and responsibilities not always

being established prior to the commencement of a project. This impacted their morale and productivity when work needed to be re-done because boundaries were not defined or stated earlier.

The last similarity between the results of this study and the Liebowitz et al. results occurred with knowledge inventories or knowledge banks within the organization. Liebowitz et al. (2000) recommended a knowledge inventory should be established gathering the expertise of all employees and departments within an organization system with access for all members of the organization (p. 9). In this study, the knowledge banks had several locations with different categories. This knowledge bank or inventory may be beneficial for employees to have one central structured knowledge bank or inventory with a specific coding scheme and organizational categories. It could also provide relevant timely information within each category for all employees within the organization to access.

In this study, participants expressed concerns over finding information, knowledge, and business processes in different places, and with frequent changes causing frustration that affected their morale and productivity. Two other Knowledge Management studies suggested having a gatekeeper (Lai & Taylor, 2012) or a Chief Knowledge Officer (CKO) (Davenport & Prusak, 2000; Raub & Von Wittich, 2004) for managing information and knowledge within an organization. Raub and Von Wittich suggest that a CKO's role has dual responsibilities not only to manage and create the assets of organizational and employee knowledge, but also use these assets for business opportunities (p. 714). Davenport and Prusak suggest eight attributes for a CKO; however, three in particular are important: "building a knowledge culture, creating a knowledge management infrastructure, and making it all pay off economically" (p. 115). In this

study, participants described the need for someone with duties similar to those of a CKO, which could be a valuable asset within the organization. The CKO would be responsible for ensuring that knowledge banks, manuals, procedures (processes and standardizations), and other knowledge related issues be up-to-date and available to all employees of the organization.

3. Process Audit

In this study, participants provided suggestions on what processes they felt needed more standardization and documentation: these participants could be labeled what Raub and Von Wittich (2004) call "local heroes." Raub and Von Wittich found that "[q]uick wins become even more effective when line managers and "local heroes" are given the chance to report on their success" (p. 722). Participants also noted that there were specific departments responsible for certain business processes, which could be part of the knowledge bank or inventory.

Gatekeepers and CKO's also would have an effective role within business process audits. Employees could contact the CKO regarding specific areas of operation within the organization, and be a main source for changes that may be required or feedback on current processes. "The more knowledge management is tied in with operational activities [business processes and standardizations] and specific initiatives, the less there is a need to refer to KM [knowledge management] in an explicit manner" (Raub & Von Wittich, 2004, p. 722). Participant comments received on standardization were also a form of individual process audit. Hammer (2007) through companies he researched over the years, developed a process audit framework in 2006 along with an enterprise evaluation process (p. 112). Hammer developed these two frameworks because he noticed that within organizations overall and with executives individually "uncertainty was manifest in hesitant decisions and confused planning, in endless debates and

unproductive decisions, in unwarranted complacency and equally unwarranted despair, in errors and re-work, in delays and abandoned efforts" (p. 112). Many of the participants in this study described these kinds of situations, and had expressed feelings similar to those mentioned by Hammer's research subjects. The evidence in the study suggested that a process audit may be helpful for the employees as well as the organization. Hammer's process audit framework and checklist are available in his Harvard Review Business article, *The Process Audit.*

D. Standardization

Hatch (2011) noted that "[i]nstitutions and institutionalization process [and standardizations] are important because of the legitimacy they provide" (p. 57). This study showed that standardization of processes was helpful for employees. Creativity was also expressed as a valuable asset within standardization. Participants did not want to lose any creativity that they were allowed, but they still wanted to retain the benefits of standardization.

For the participants in this study, morale and productivity were affected when standardization processes were not working or frustration set in with complications deriving from the process. A similar finding was found in the study by Seethamraju and Marjanovic (2009) referenced in the Literature Review section. Their study was also located in a faculty within a university setting. Ungan (2006) suggests that "[p]rocess documents are mostly known for their great help in detecting problems or revisions in a given process, and they are also important tools to standardize a process" (p. 139). Ungan proposed a seven step framework for standardization, which is illustrated in the modified Figure 13. The study advocated that additional process levels were required to be added onto Figure 13, and are shown in Figure 14, in order to validate evidence from participants. The "acquire the knowledge for each step" and

"continuous feedback" levels have arrows with a feedback loop because re-assessing knowledge type and processes may change within the organization over time. Considering the results from this study, it is recommended that the Faculty of Extension consider implementing Ungan's framework, along with the added steps from Figure 14 by the Principal Investigator, in order to alleviate the frustrations expressed by participants with lack of standardization.

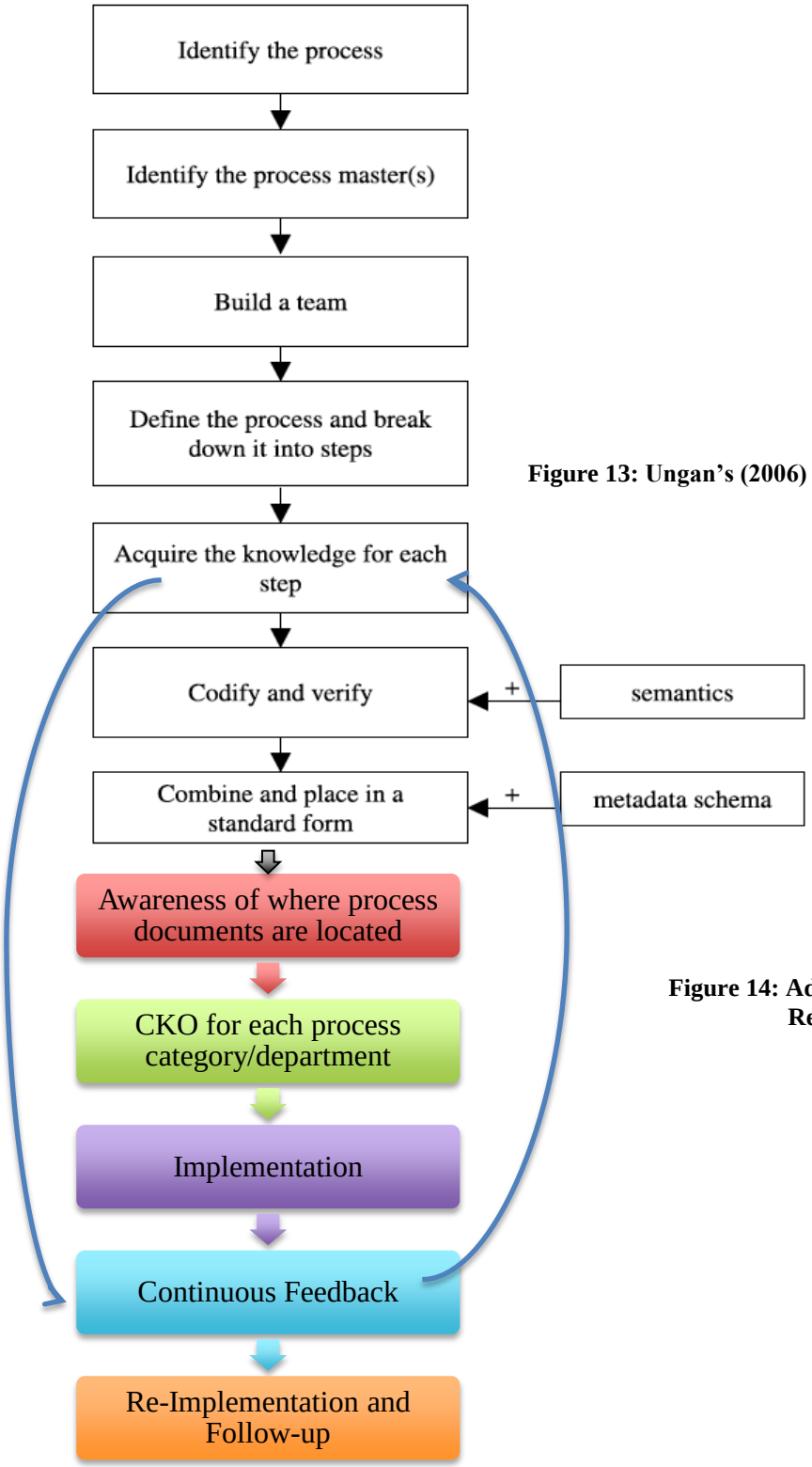

Figure 13: Ungan's (2006) Seven Step Framework, p. 140.

Figure 14: Additional Process Levels for Standardization Recommended by the Principal Investigator

Semantics and metadata of standardization issues surfaced within the evidence from this study. Fleischmann et al.'s (2012) subject-orientated business (S-BPM) process approach and The Dublin Core Metadata Initiative (DCMI) could assist the Faculty of Extension with Knowledge Management and Business Process Management. Participants in this study expressed concerns over process owners and enthusiasm for more employee involvement with designing, implementing, and providing feedback with business processes that they use frequently as part of their jobs duties and responsibilities. The S-BPM approach would complement the three audits, (communication, knowledge, and process), standardization, and a CKO. In a S-BPM approach – there are specific roles and interactions, "either as [a] Governor [person responsible for/driving the process], Actor [employee using the processes], Experts or Facilitator [supporting organizational development or a CKO]. They are the subjects that act (predicate), which leads to changes in organizational processes (objects)" (Fleischmann et al., p. 41).

The Dublin Core Metadata Initiative (DCMI), which also is part of ISO Standard 15836-2009, has fifteen attributes that are used for standardization, these include: contributor, coverage, creator, date, description, format, identifier, language, publisher, relation, source, subject, and title (DCMI). In this study, participants provided similar terms from the DCMI when describing why they created their own templates and processes for standardization. These DCMI attributes could be customized for document standardization, and would also be helpful for Intranets, knowledge banks, organizational memory, and manuals within the organization. Variations of DCMI attributes have been used in other studies, such as Lai and Taylor (2012). Lai and Taylor studied consulting firms and their usage of DCMI terms for standardized documentation within their knowledge management to DCMI.

E. Morale and Productivity

This study revealed that business processes and knowledge management had a considerable affect on the morale and productivity of participants. Participants had the opportunity to provide responses pertaining to two levels of morale within the organization. One was on an individual basis using a Likert scale regarding morale in terms of overlooked and excluded procedures, while the other was an open response question asking for comments on a specific situation. The findings illustrated a multilevel viewpoint from participants either from an individual, group, or organizational standpoint, depending on the type of workplace scenario.

Several overarching themes emerged from the morale and productivity issues within the workplace situations: changes, communication and decision-making, roles, duties, and responsibilities, and workload. Participants provided examples of negative impacts on morale and productivity from an individual, group, and organizational level. Johnsrud, Heck, and Rosser (2000) used a multilevel structural model and different levels of morale stages (individual, group, and institution) in their study to measure and define the morale of midlevel administrators within a university setting, and how it affected their intent for leaving a higher education institution (p. 47). This study had similar results: participants' responses focused mainly on morale issues at the individual level; however, some participants provided comments on group situations and on the organization as a whole. In their findings, Johnsrud et al. suggested that individual morale alone could not provide enough evidence for the collective morale of the institution (p. 54).

Frustration was the most prevalent feeling that emerged from the comments of those in this study and from those in the Johnsrud et al. (2000) study. This frustration was a major factor that negatively affected morale and productivity in in the Faculty of Extension. Davenport and

Prusak (2000) suggest that employees may be more "satisfied with their work and work harder than those frustrated by lack of communication, wasted effort, and uniformed decision making" (p. 49). In this study, poor morale and productivity, as described by the participants had some negative impacts on process control; teamwork; the ability to establish project roles, duties, goals, and timelines; the implementation of processes; and the retention of enough flexibility within processes to allow for change. Lehmann (2012) suggests that the "degree to which a workforce collaborates, and the processes and systems the organization puts in place to do so, directly determines its success (or failure)" (p. 75). Establishing communication mediums and assigning a gatekeeper or CKO at the beginning of projects, may help teams work more effectively for future teamwork within the organization.

F. Limitations of This Study

One limitation of this study is that the questionnaire expected participants to have some working knowledge of the organization in terms of Business Process Management and Knowledge Management. If the job role of participants did not interact with business processes and knowledge management on a day-to-day basis, participants may have considered that the study would be not be relevant to their position in the organization.

Another limitation was that the study was conducted by a graduate student who also is an employee. The Principal Investigator strictly abided by all indicated precautions described within previous sections to ensure that anonymity was paramount throughout the study. Participants were reminded several times when providing open-ended responses to respond without identifying themselves or other co-workers. The risk was low that a participant would be

identified in the anonymous questionnaire, unless the participant provided explicit identifying information.

VII. Future Research

Studying Business Process Management and Knowledge Management, especially at a business unit level within a faculty in a university setting is important. From the findings of this study, three other possible areas of future research arose. These include: follow-up of implementation, decision-making, and informal tacit knowledge transfer.

A future study design for a similar study would be to build in a time factor for follow-up with the organization on implementation of recommendations regarding process and standardizations. Would suggestions from participants or findings from the study be followed through and implemented by the organization? How would Business Process Management, Knowledge Management, morale, and productivity be impacted within the follow-up?

Additional research on decision-making within an organization, and how it affects Business Process Management, Knowledge Management, morale, and productivity within the business unit, would add to the information known about this area. Feedback loops could be more comprehensive and include the organizational hierarchy. Individuals with decision-making power, those that influence power, and those who are underutilized or overlooked as sources of knowledge for decisions in the hierarchy of the unit could be factors in the study.

The last area of research recommended for additional study is the informal networks and tacit transfer of knowledge within an organization. Davenport and Prusak (2000) discuss the importance of organizational gossip as a form of internal knowledge transfer, and cite the

organizational expert James March's views that gossip is not wasted time, but an update on internal corporate knowledge (p. 38). Contrasting informal knowledge to formal knowledge within an organization could explore how explicit and tacit knowledge impacts employee morale and productivity within the workplace.

VIII. Conclusion

The Faculty of Extension population who participated in this study generally were knowledgeable about their faculty and aware of Business Process Management and Knowledge Management. The study found that procedures overlooked and excluded from the overall organization knowledge bank and management systems, did have an impact on employees in terms of morale and productivity.

Business Processes Management and Knowledge Management were recognized as key players in the overall operation of the organization, and were recognized as requiring additional feedback to work even more efficiently and productively. Participants appeared to want more user involvement with the management of knowledge and day-to-day business processes at their level of job role and duties.

Standardization, with flexibility for creativity and judgment calls for exceptions, generally was supported and appreciated by participants. Participants did not underestimate their level of knowledge (explicit/tacit) and expertise with their job duties, roles, and responsibilities: they expected high levels of performance from themselves and wanted easy access to the information and knowledge that would facilitate that performance. Job role and age did not

appear to influence responses, and no stereotypes of job roles were apparent in any of the participants' responses.

Morale and productivity had value for participants within their Faculty of Extension workplace, value that should not be underestimated in any communication initiatives. Knowledge Management and Business Process Management did have an impact on morale and productivity, and participants provided an abundant bank of suggestions for Business Process and Knowledge Management improvement within the Faculty. It is hoped that the results of this study will provide information and knowledge that will be useful to the Faculty of Extension or to other organizations (and post-secondary institutions) examining their Knowledge Management and Business Process Management.

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Appendix

Appendix A: Process Definitions Overview

Author	Process
Davenport, Short, Young, & MIT Sloan School of Management (1990)	"[A] set of processes forms a business system – the way in which a business unit, or a collection of units carries out its business. Processes have two important characteristics: customers (processes have defined business outcomes) and cross organizational boundaries (normally occur across or between organizational subunits" (p. 12)
Armistead, Harrison, Rowlands (1994)	"Process" refers to the conversion of inputs (resources) into outputs (goods and services)" (p. 47)
Talwar (1993)	"[T]o be any sequence of pre-defined activities executed to achieve a pre-specified type or range of outcomes" (p. 26).
Hammer (2010)	"Process means positioning individual work activities – routine or creative – in the larger context of the other activities with which it combines to create results" (p. 11)
Lehmann (2012)	Basic version "[A] logical sequence of activities that transforms input into output or results" (p. 83) Other factors: "[A] process as a means to create value" (p. 83). "[H]ow we do business with customers, partners, and suppliers; how we establish and nurture relationships; how we make, service, and fix things; how we share knowledge to create new things; how we make decisions, solve problems, or do something that has never been done before. And in the end, processes provide the means for use to make money and get paid" (p. 83). Extended version "(1) *Process* is a logical series of related activities that converts input to results or output. (2) *Value-added extension* is designed to create or deliver customer value or shareholder value through efficiency. (3) *Asset extension* is an asset that affects the quality of a product, service, or brand to uniquely satisfy customer needs and differentiates its executor from competitors" (p. 83).

Table A1: Process Definitions from 1990 - 2012

(Back to Appendix A in Main Document)

Appendix B: Types of Process Overview

Author	Process
Davenport, Short, Young, & MIT Sloan School of Management (1990)	Three types of process: 1. Entities (interorganizational, interfunctional, and interpersonal); 2. Objects (physical and informational); and 3. Activities (operational and managerial)
Hammer (1990)	Operational, Management, and Support
De Toro & McCabe (1997)	Core: 1. Operational; 2. Management; and 3. Support Internal processes can also include management and support. Non-Core are other, sub-processes
Pandya, Sega, & Carrie (1997)	Three types of process: 1. Management; • Direction setting; business planning, and direct business. 2. Operate; and • Obtain order, product & service development, order fulfillment, and support fulfillment. 3. Support Marketing and technology, financial, human resource, and information management
Hammer (2010)	1. Core 2. Enabling (or support) 3. Governing
McDonald (2010)	2 Types: 1. Formal; and 2. Informal
Fleischmann, Schmidt, Stary, Obermeier, & Börger (2012)	Subject-Business Process orientated
Lehmann (2012)	Three types of process: 1. Operating; 2. Support; and 3. Management Other process: 1. Control a) Exception b) Resolution c) Business Rules as Process Controls 2. Core 3. Noncore

Table B1: Type of Process Overview 1990-2012

(Back to Appendix B in Main Document)

Appendix C: Elements of Business Process Management Overview

(Back to Appendix C in Main Document)

Author	Components
Hammer (1990)	7 Principles 1. Organize around outcomes, not tasks; 2. Have those who use the output of the process perform the process; 3. Subsume information-processing work into the real work that produces the information; 4. Treat geographically dispersed resources as though they were centralized; 5. Link parallel activities instead of integrating their results; 6. Put the decision point where the work is performed, and build control into the process; and 7. Capture information once and at the source.
Talwar (1993)	Strategy approach 6 Key Steps in Re-Engineering 1. Vision Definition; 2. Plan Development; 3. Business Analysis; 4. Business Redesign; 5. Implementation; and 6. Measurement
Elzinga, Horak, Lee, & Bruner (1995)	Method: 1. Preparation; 2. Process Selection; 3. Process Description; 4. Process Quantification; • "potential opportunities for improvement may be immediately revealed. These early-identified improvement opportunities, so called "low-hanging fruit," can be immediately acted upon coincident with more detailed study and analysis of the process" (p. 122)

Author	Components
De Toro & McCabe (1997)	1. Identifying core processes; 2. Role of the Process Owner; 3. Developing a Mandate for Change; 4. Commission Core Process Improvement Teams; 5. Coordinating Process Improvements; 6. Rating Processes and Selecting an Improvement Strategy; and 7. Avoid Allegiance to One Technique
McDonald (2010)	Along with a basic definition, includes: people, technology, and information.
Hammer (2010)	"[A]n integrated system for managing business performance by managing end-to-end business process" (p. 4-5) 7 Principles: 1. All work is a process work; 2. An process is better than no process; 3. A good process is better than a bad process; 4. One process version is better than many; 5. Even a good process must be performed effectively; 6. Even a good process can be made better; and 7. Every good process eventually becomes a bad process (p. 11-12)
Rosemann & vom Brocke (2010)	6 Core Elements of BPM: 1. Strategic Alignment; 2. Governance; 3. Methods; 4. Information Technology; 5. People; and 6. Culture
Fleischmann, Schmidt, Stary, Obermeier, & Börger (2012)	Subject Business Process Management (S-BPM) Natural Language structure: subject-predicate-object Stakeholders: 1. Governors; 2. Actors; 3. Experts; 4. Facilitators

Table C1: Elements of Business Process Management Overview 1990-2012

(Back to Appendix C in Main Document)

Appendix D: Faculty of Extension Program List

Program	Description
Arts & Humanities	Social Media, Spanish Language, Visual Arts
Communications	Master of Arts in Communication & Technology (MACT), Social Media, Spanish Language, Information Access and Protection of Privacy, Information Technology Management
Community Engagement Studies	Community Engagement Studies, Graduate Certificate in Community-Based Research Evaluation (CBRE)
ESL	ESL – Preparing for graduate studies, ESL – Bridging Program, Teaching in English
Government Studies	Applied Land Use Planning, Information Access and Protection of Privacy, National Advanced Certificate in Local Authority Administration (NACLAA – Level I & II/Local Government Certificate)
Management	Business Analysis, Canadian Institute of Management, Fellowship in Risk Management, Human Resource Management, Information Technology Management, Insurance Institute of Canada, Management Accounts, Management Development, Management Development for Police Services, Management Development for Professional Engineers and Geoscientists of Alberta, Purchasing and Supply Management, Qualified Administrative Assistants, Social Media, and Supervisory Development
Sciences	Applied Geostatistics, Construction Administration, Environmental Resource Management, Occupational Health and Safety
Teaching & Learning	Adult & Continuing Education (CACE), Teaching and Learning in Higher Education, and Teaching in English

Table D1: Faculty of Extension Program List and Description

(Source: Faculty of Extension, University of Alberta (2013, July). Programs & courses. Retrieved from http://www.extension.ualberta.ca/study/)

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Appendix E: Information Letter of Consent Agreement

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UNIVERSITY OF ALBERTA
FACULTY OF EXTENSION

COMMUNICATIONS AND TECHNOLOGY
GRADUATE PROGRAM

Enterprise Square
10230 Jasper Avenue NW
Edmonton, Alberta, Canada T5J 4P6

March 22, 2013

Information Letter and Consent Agreement

Dear Faculty of Extension Staff Member:

I am a graduate student in the Master of Arts in Communications and Technology Program, and this letter contains information about the research that you are being invited to participate in at this time.

Study Title: Standards of Practice and Procedure for Day-to-Day Business Processes and Knowledge Management within an Organization

Principal Investigator	**Supervisor**
Michelle Zolner, BA Graduate Student MA in Communications and Technology Program	**Dr. Ann Curry** Professor MA in Communications and Technology Program
Faculty of Extension, University of Alberta 2nd Floor Enterprise Square, 10230 Jasper Avenue Edmonton, AB T5J 4P6 michelle.zolner@ualberta.ca 780-492-6914	Faculty of Extension, University of Alberta 2nd Floor, Enterprise Square 10230 Jasper Avenue Edmonton, AB T5J 4P6 ann.curry@ualberta.ca 780-248-1110

Background

Business process and knowledge management are frameworks within an organization that assist the flow of operations. While the overall business process and knowledge management are identified and documented within an organization, it is often day-to-day processes and procedures that may be excluded or overlooked within the departments of an organization.

Standardization of practice does not entail micro managing; rather, it can be viewed in a positive light as an aid to streamline productivity and morale within the workplace. If employees spend the majority of their time searching for ways to complete tasks when there is no identifiable procedure or must create a procedure to complete the task, it affects productivity and morale.

Knowledge management is part of an organization. In order to continue to refine and be innovative, organizations need to harness, retain, and develop their knowledge within the organization. This knowledge needs to be managed effectively and complements the organizational business process and standards of practice and procedure.

UNIVERSITY OF ALBERTA
FACULTY OF EXTENSION

COMMUNICATIONS AND TECHNOLOGY
GRADUATE PROGRAM

Enterprise Square
10230 Jasper Avenue NW
Edmonton, Alberta, Canada T5J 4P6

Purpose

In this study, I will be looking at the Faculty of Extension's day-to-day overlooked or excluded business processes and standards of practice and procedure, and how they affect employee productivity and morale.

You are being invited to participate in this study on the Faculty of Extension because you are part of the Faculty of Extension staff. The results of this study will be used to complete my Research Project for my Graduate Studies program.

Study Procedures

You are being asked to participate in an anonymous electronic questionnaire powered by Google Docs, which will take approximately fifteen minutes to complete.

Voluntary Participation

Participation is voluntary: submitting the questionnaire will be taken as consenting to participate in this study.

Withdrawal

If you choose not to participate, there are no repercussions. Responses are only submitted by clicking the "submit" button at the end of the questionnaire. Withdrawing by closing the browser at any time will cancel your responses, as they will not be submitted. Withdrawal after you have submitted your responses will not be possible, as there are no identifiable means to withdraw your responses. However, if you are uncomfortable answering any question(s), please proceed to the next one, and submit the remainder of your answers.

Benefits

The results of this study will reveal information about procedures relating to business processes and how knowledge is managed within the Faculty of Extension. It may also suggest areas where changes could be made for improving workplace productivity and morale.

Risks

The risks for this study are minimal. You will be asked to voluntarily complete an anonymous questionnaire. In the questionnaire, you will be asked to maintain anonymity to yourself and co-workers when answering questions that ask for additional descriptions and/or explanations.

UNIVERSITY OF ALBERTA
FACULTY OF EXTENSION

COMMUNICATIONS AND TECHNOLOGY
GRADUATE PROGRAM

Enterprise Square
10230 Jasper Avenue NW
Edmonton, Alberta, Canada T5J 4P6

Confidentiality and Anonymity

All responses will be anonymous and confidential, and in no way can be traced back to you as the participant, or affect your job. Your CCID and email will not be recorded in the Google spreadsheet that gathers all the responses. Access to data and information will be restricted to myself as principal investigator and my supervisor. All files (electronic and hard copy), resources, USB key, or other electronic devices, will be stored in my supervisor's locked office on the University of Alberta Enterprise Square Campus. If working on my home or office computer, access is password protected and only known to me, and files will be encrypted. Computer files will be encrypted, and any external storage, such as a USB key, will have a password and encryption security.

Data will be kept for five years. Electronic data will be wiped clean from my computer and any electronic devices used, ie a USB key or any other electronic devices. Any hard copy files, if there are any, will be shredded using the official University of Alberta shredding policies.

While the results of the study may be presented and/or published, the identities of the participants will remain protected.

Further Information

The plan for this study has been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta. If you have concerns about this study, you may contact the Research Ethics Office at 492-2615. This office has no direct involvement with this project

Sincerely,

Michelle Zolner
Principal Investigator

Questionnaire Link

To complete the questionnaire, please click this shared link.

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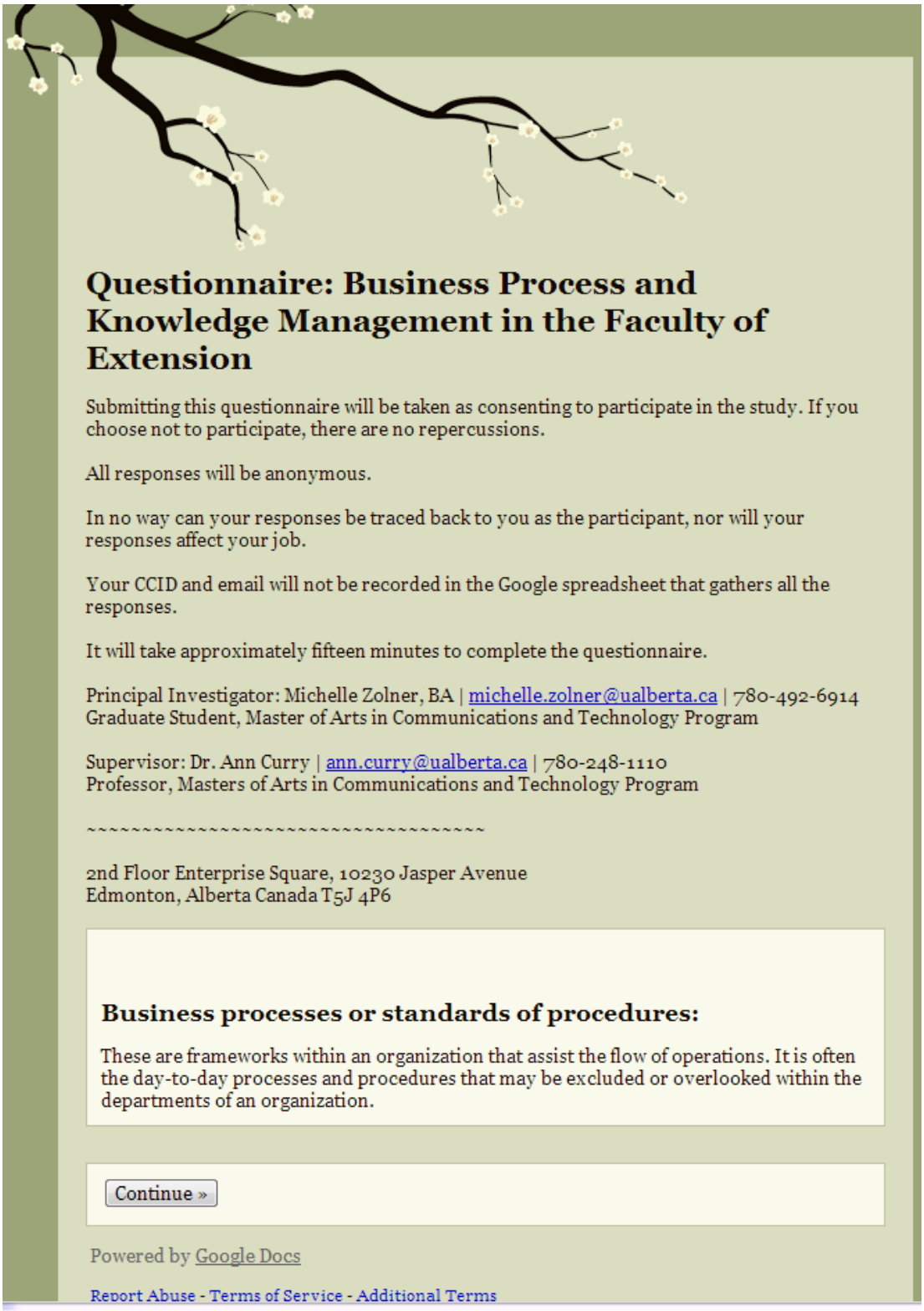
Appendix F: Electronic Web-Based Questionnaire Screen Capture of 'Introduction Page'



Questionnaire: Business Process and Knowledge Management in the Faculty of Extension

Submitting this questionnaire will be taken as consenting to participate in the study. If you choose not to participate, there are no repercussions.

All responses will be anonymous.

In no way can your responses be traced back to you as the participant, nor will your responses affect your job.

Your CCID and email will not be recorded in the Google spreadsheet that gathers all the responses.

It will take approximately fifteen minutes to complete the questionnaire.

Principal Investigator: Michelle Zolner, BA | michelle.zolner@ualberta.ca | 780-492-6914
Graduate Student, Master of Arts in Communications and Technology Program

Supervisor: Dr. Ann Curry | ann.curry@ualberta.ca | 780-248-1110
Professor, Masters of Arts in Communications and Technology Program

~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~

2nd Floor Enterprise Square, 10230 Jasper Avenue
Edmonton, Alberta Canada T5J 4P6

Business processes or standards of procedures:

These are frameworks within an organization that assist the flow of operations. It is often the day-to-day processes and procedures that may be excluded or overlooked within the departments of an organization.

Continue »

Powered by Google Docs

Report Abuse - Terms of Service - Additional Terms

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Appendix G: Email to Faculty of Extension Staff

University of Alberta Mail - Zolner MACT Research Study-

UNIVERSITY OF ALBERTA

Michelle Zolner <zolner@ualberta.ca>

Zolner MACT Research Study -

1 message

Michelle Zolner <zolner@ualberta.ca> Fri, Mar 22, 2013 at 11:31 AM
To: Michelle Zolner <michelle.zolner@ualberta.ca>

Dear Faculty of Extension Staff,

I am doing a study on business process and knowledge management within the Faculty of Extension, for my Master of Arts in Communications and Technology (MACT).

Please take the time to read through the attached information letter, which contains a link to a questionnaire that will only take approximately fifteen minutes of your time. When you click on the link, you may receive a pop up that shows up sometimes when clicking links within PDFs, "If you trust this site, choose allow." Please click "allow."

Your responses will be completely anonymous, and will help me with my research in the field of business process, knowledge management, and workplace productivity and morale.

I appreciate your participation, and if you have any questions, please feel free to contact me.

Kindest Regards,

Michelle Zolner, BA

Principal Investigator

Graduate Student, Master of Arts in Communications and Technology

Supervisor: Dr. Ann Curry

Attachment: Zolner_ReasearchInformationLetter2013.pdf

Zolner_ResearchInformationLetter2013.pdf
77K

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Appendix H: Final Version of Questionnaire Questions and Layout used for Designing the Electronic Version

(Back to Appendix H in Main Document)

Header Page 1:

Questionnaire: Business Process and Knowledge Management in the Faculty of Extension

Submitting this questionnaire will be taken as consenting to participate in the study. If you choose not to participate, there are no repercussions.

All responses will be anonymous. In no way can your responses be traced back to you as the participant, nor will your responses affect your job. Your CCID and email will not be recorded in the Google spreadsheet that gathers all the responses.

It will take approximately fifteen minutes to complete the questionnaire.

Principal Investigator: Michelle Zolner, BA | michelle.zolner@ualberta.ca | 780-492-6914
Graduate Student, Master of Arts in Communications and Technology Program

Supervisor: Dr. Ann Curry | ann.curry@ualberta.ca | 780-248-1110
Professor, Master of Arts in Communications and Technology Program

~~~~~~

2nd Floor Enterprise Square, 10230 Jasper Avenue
Edmonton, Alberta Canada T5J 4P6

Business processes or stands of procedures:
These are frameworks within an organization that assist the flow of operations. It is often the day-to-day processes and procedures that may be excluded or overlooked within the departments of an organization.

Page 2:

1. Please choose a job role that best describes your duties. This data will be helpful for having different perspectives across the organizational structure of the Faculty of Extension, University of Alberta.

Check all that apply.

Administrative Support Staff
Manager
Educator
Researcher
Temp
Other:
~~~~~~

2. Please select your age group.

18-24
25-34
35-44
45-54
55-64
65 and over

Page 3:

3. Do you use the Faculty of Extension Intranet - the Lantern?

An intranet is similar to a Website, except that it is a private internal site for an organization that is usually password protected.

Yes (Go to page 5) or No (Continue to page 4)

If No, go to Page 4:

3B. Why do you not use The Lantern?
Check all that apply.

Do not know what it is
Do not know where to access the site
Do not know how to use the site
Find information from other sources
Have difficulty navigating through the site
Information contained on the site is not timely, relevant, or accurate
Cannot find the information I need
Am not comfortable using the technology
Would rather share/obtain information via email, telephone, or in-person
Other: please specify

Page 5

4. If you need to find information about how to carry out a specific procedure that you are unfamiliar with, what do you do?

Check all that apply.

Talk face-to-face to a co-worker
Email a co-worker
Telephone a co-worker
Check the Lantern
Check the University of Alberta website
Check the Faculty of Extension website
Look for the information within Faculty of Extension operational documents
Other: please specify

5. To your knowledge, are there business processes or procedure templates available for you to use?

Yes or No

Page 6

6. Do you create your own day-to-day business process templates, cheat sheets, or reference documents?

Yes (Go to page 7) or No (Go to page 8)

If Yes, go to Page 7:

6B. Why do you create own day-to-day business process templates, cheat sheets, or reference documents?

Please explain.

Page 8

7. If there are changes or new procedures to follow, how do you usually find out about them?

Check all that apply.

Email
Check the Lantern
Check the University of Alberta website
Check the Faculty of Extension website
At a staff meeting
Through in-house training
In the staff room
Conversations with a co-worker
Other: please specify

Page 9

8. Change in procedures can sometimes affect workplace morale. Describe a situation that affected you.

To maintain anonymity, please describe in a way that will not identify you or other co-workers. Try to describe it in general terms as possible to show your example of the situation. If this does not apply to you, leave this section blank.

9. At this time, on a scale of 1 to 5, (1 = High, 5 = Low), what is the state of your workplace morale in terms of overlooked or excluded procedures that you do day-to-day?

1	2	3	4	5
High	Somewhat high	Satisfactory (doing ok)	Somewhat low	Low

Page 10

10. If procedure information (new or changes) is sent via email, what do you do with the information?

    Check all that apply.

    Keep in your Email
    Put it in an electronic folder outside your email box
    Print it off, and put in a folder/binder that you created
    Delete it
    Print it out, and post it in your work station
    Other: please specify

11. Sometimes procedures are overlooked or excluded from being documented or standardized, existing only in the "Organizational Memory." Please describe any procedures that you would like documented and/or standardized for you to use in your job.

Page 11

12. A knowledge bank is a list of experts in your organization who are knowledgeable in a specific area and know how to complete certain procedures. Do you have this resource available to you?

Some examples include: Marketing expertise, proof reading team across units, list of professor expertise, subject matter experts, outside educators, instructional design, etc.

    Yes (Go to page 12) or No (Go to page 13)

    If Yes, go to Page 12:

    12B. Where are the knowledge bank lists located?

    Check all that apply.

    In an electronic folder you created
    In shared electronic folders for the Faculty of Extension
    Posted up around the workplace

Posted in the Lantern
Posted in your work space
Printed out for easy reference use
Stored in department electronic folders
Other: please specify

Page 13

13. Standard procedure documents (instructions or manuals) exist for most knowledge management systems on how to use these systems.

13B. What is your opinion about these instructions or manuals?

For example, are they useful, unhelpful, do not exist in the organization, it depends - some are useful, while others are not, or other reasons

14. Productivity may sometimes be affected if procedures are not clearly defined when working on a team project. Has this happened to you?

Yes (Go to page 14) or No (Go to page 15)

If Yes, go to Page 14:
14B. Please describe how your productivity was affected. To maintain anonymity, please describe in a way that will not identify you or other co-workers. Try to describe it in general terms as possible to show your example of the situation.

Page 15
15. Do you have any further comments about business processes/procedures and knowledge management in the Faculty of Extension?

Thank you for taking the time to complete this questionnaire.

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Appendix I: Research Project Poster

Research Project

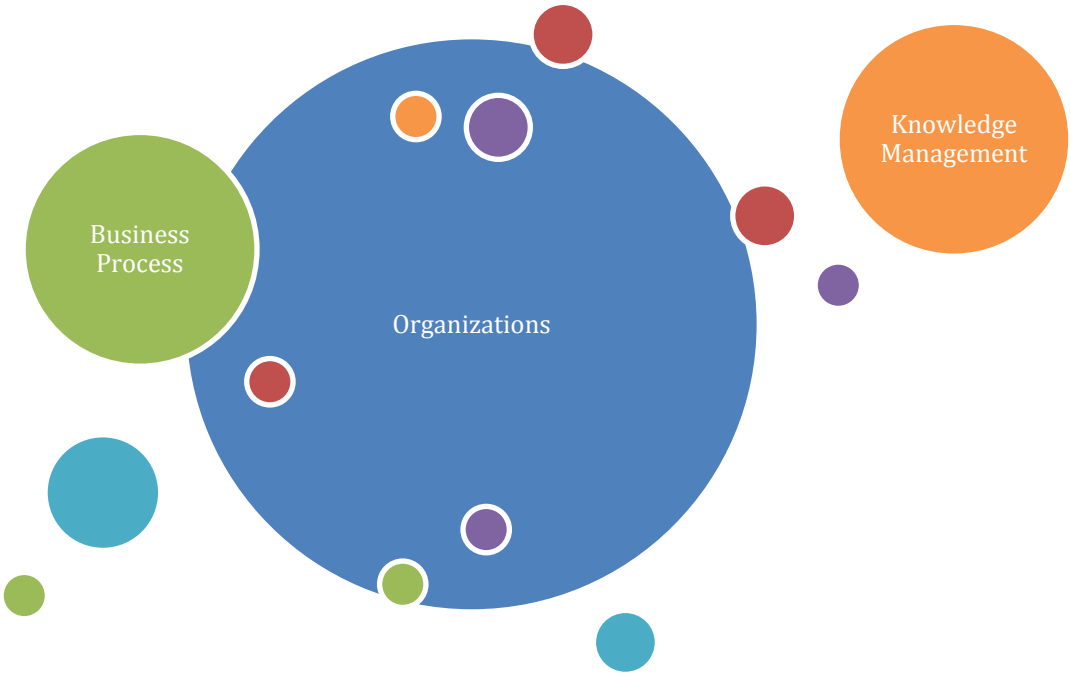
Principal Investigator: Michelle Zolner, BA
Graduate Student
MA in Communications and Technology

Study Title: Standards of Practice and Procedure for Day-to-Day Business Processes and Knowledge Management within an Organization

Study Information and an Invitation to Participate have been
Sent via Email to all Faculty of Extension Staff

If you would like more information about the study or questionnaire, please contact Michelle Zolner.

Faculty of Extension, University of Alberta
2nd Floor Enterprise Square, 10230 Jasper Avenue
Edmonton, AB T5J 4P6
michelle.zolner@ualberta.ca 780-492-6914



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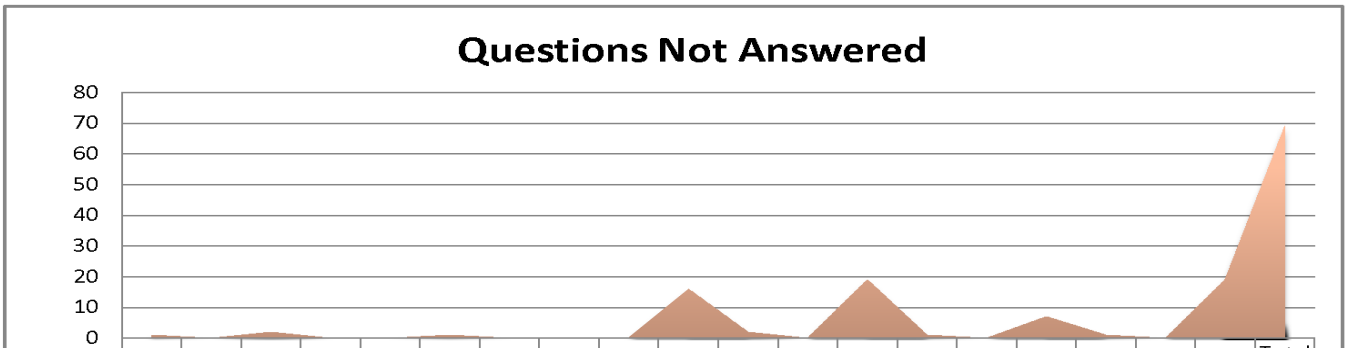
Appendix J: Field Testing Detailed Questions

- *Access:* Do all connections work, or is access limited to one browser (e.g., some things don't work with Netscape [Firefox, Explorer, Chrome] if they are created with Internet Explorer and vice versa)?
- *Navigation:* How does the respondent move from page to page?
- *Directions:* Are the directions provided at the top of each screen?
- *Response mode:* If both radio buttons and drop-down response lists are used, are the directions clear about how to respond to each question?
- *Response scales:* Are these always in view as the respondent answers the questions?
- *Review previous responses:* Can the respondent revisit screens of the questionnaire that have been completed using a back button or other mechanism?
- *Required questions:* Are there some questions that require responses before moving forward? Do these work as planned?
- *Fixed-sum questions:* Are the fixed-sum questions working as planned? For example, do some questions require the respondent to estimate percentages, such as the percentage of time spent on various activities? If the percentages do not sum to 100%, a message should display asking the respondent to check his or her numbers—and not let the respondent move forward until the numbers do sum to 100%.
- *Submit button:* Does the submit button work as planned? Does a "Thank-you" note display at the end?
- *Database:* Do the respondent data flow to the database as planned? Do all the connections work?

(Source: Thomas, S. (2004). *Using web and paper questionnaire for data-based decision making: From design to interpretation of the results*, pp. 114). SAGE Publications, Inc. doi: 10.4135/9781412986496.n2.)

(Back to Appendix J in Main Document)

Appendix K: Specific Questions Not Answered by Participants



	Q1	Q2	Q3	Q3B	Q4	Q5	Q6	Q6B	Q7	Q8	Q9	Q10	Q11	Q12	Q12B	Q13	Q14	Q14B	Q15	Total NA
P01													1							1
P02										1									1	2
P03																				0
P04										1			1			1				3
P05	1		1			1					1		1						1	6
P06										1			1			1			1	4
P07													1						1	2
P08										1			1			1			1	4
P09										1			1			1	1		1	5
P10																				0
P11										1			1							2
P12																				0
P13																				0
P14													1			1				2
P15																			1	1
P16																			1	1
P17										1									1	2
P18																				0
P19													1							1
P20																				0
P21																			1	1
P22			1							1									1	3
P23																				0
P24										1			1						1	3
P25													1							1
P26										1			1						1	3
P27																				0
P28										1	1		1			1			1	5
P29																				0
P30																				0
P31																			1	1
P32																				0
P33																				0
P34													1						1	2
P35										1			1	1		1			1	5
P36										1			1							2
P37										1										1
P38																				0
P39										1			1						1	3
P40										1										1
P41													1						1	2
	1	0	2	0	0	1	0	0	0	16	2	0	19	1	0	7	1	0	19	69

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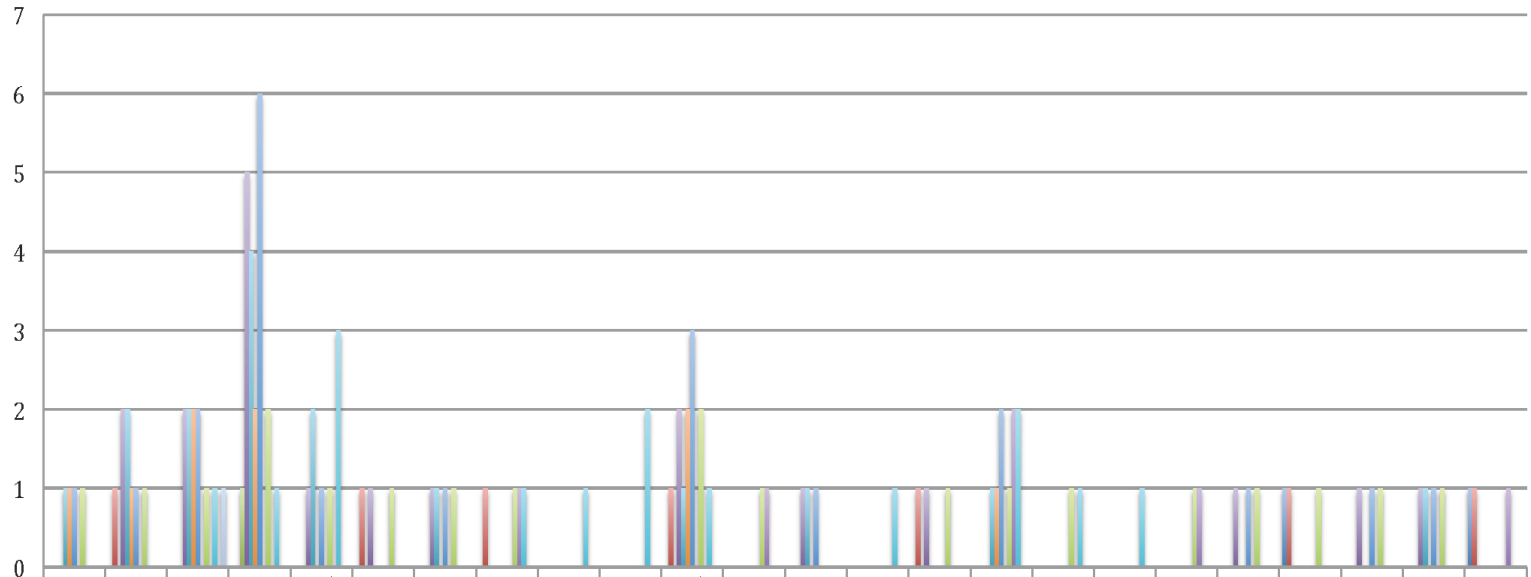
Appendix L: Participants' Responses for Question 3B

Comparison of Job Role and Age for Question 3B: Reasons for Not Using the Intranet



	AS1 Administrative Support Staff (18-24)	AS2 Administrative Support Staff (25-34)	AS3 Administrative Support Staff (35-44)	AS4 Administrative Support Staff (45-54)	AS5 Administrative Support Staff (55-64)	ASE1 Administrative Support Staff, Educator (45-54)	ASO1 Administrative Support Staff, Other (45-54)	M2 Manager (25-34)	M3 Manager (35-44)	M4 Manager (45-54)	M5 Manager (55-64)	MR1 Manager, Researcher (35-44)	E6 Educator (65 and over)	ER1 Educator, Researcher (55-64)	EAS1 Educator, Administrative Support Staff (45-54)	R4 Researcher (45-54)	R6 Researcher (65 and over)	RE1 Researcher, Educator (55-64)	RM1 Researcher, Manager (35-44)	RT1 Researcher, Temp (18-24)	T3 Temp (35-44)	TR1 Temp, Researcher (18-24)	OAS1 Other, Administrative Support Staff (45-54)	B2 Blank (25-34)
3B1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
3B2	0	1	0	0	0	1	0	1	0	0	1	0	0	0	1	0	0	0	0	0	1	0	0	1
3B3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3B4	0	2	2	5	1	1	1	0	0	0	2	0	1	0	1	0	0	0	0	1	0	1	1	0
3B5	1	2	2	4	2	0	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	1	0
3B6	1	1	2	2	0	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0
3B7	1	1	2	6	1	0	1	0	0	0	3	0	1	0	0	2	0	0	0	1	0	1	1	0
3B8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3B9	1	1	1	2	1	1	1	1	0	0	2	1	0	0	1	1	1	0	1	1	1	1	1	0
3B10	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	2	0	0	1	0	0	0	0	1
3B11	0	0	1	1	3	0	0	1	1	2	1	0	0	1	0	2	1	1	0	0	0	0	0	0
3BNA																								
3B99			1																					

Question 3B Response Selections

3B1 – Do not know what it is
3B2 – Do not know where to access the site
3B3 – Do not know how to use the site
3B4 – Find information from other sources
3B5 – Have difficulty navigating through the site
3B6 – Information contained on the site is not timely, relevant, or accurate
3B7 – Cannot find the information I need
3B8 – Am not comfortable using the technology
3B9 – Would rather share/obtain information via email, telephone, or in-person
3B10 – Other: please specify
3B99 – Participant did not answer Question 3

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Appendix M: Question 3B 'Other Comments'

Participant, Job Role, and Age Group	Other Reasons for Not using 'The Lantern'	'Check all that apply' Response Choices
P01, M2 (25-34)	Information that I process is too confidential to be contained in that database.	3.2
P04, R4 (45-54)	Password access is always a problem.	3.5, 3.6, 3.7
P09, RM1/MR1 (45-54)	My impression is that it contains administrative information that seldom if ever applies to me, and which I can access elsewhere through colleagues who do know this information.	
P25, R4 (45-54)	When I have searched for information, I have discovered that the information is out of date.	3.7
Total Number of Participants for Responding to the 'Other' Comments (n = 4)		

Table AM: Questionnaire Question 3B 'Other Reasons' for Not using 'The Lantern'

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Appendix N: Question 4 'Other Comments'

Participant, Job Role, and Age Group	Other Ways to Find out About Information to Carry out Procedures	Human Interaction (HI) or Virtual Technology (VT)	'Check all that apply' Response Choices
P15, M3 (35-44)	I would check the lantern more frequently...but it is painfully SLOW.	VT	4.1, 4.2, 4.4, 4.5
P19, M5 (55-64)	Check U of A central policies and procedures	HI or VT	4.1, 4.2, 4.5
P30, M4 (45-54)	Google	VT	4.1, 4.2, 4.3, 4,5, 4.6
P35, AS5 (55-64)	Shared documents	VT	4.1, 4.2, 4.3, 4.7
P37, AS3 (35-44)	Reach out to counter parts on campus and review UAPPOL	HI or VT	4.1, 4.2, 4.3, 4.4, 4.5, 4.7
Total Number of Participants for Responding to the 'Other' Comments (n = 5)			

Table AN: Questionnaire Question 4 'Other Comments' on Finding out About Information on How to Carry out Unfamiliar Procedures

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Appendix O: Question 11 Suggestions from Participants

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Requested Procedures from Participants for Documentation and/or Standardization
Unfortunately, all of my procedures and protocols are too secure to be kept in your database. However, they are available to those with the proper clearances.
If I describe them there won't be anonymity, they are quite department specific
Program units used to be responsible for maintaining and delivering all content, assessment and outcomes for delivered courses. Starting approximately two years ago a blurring of responsibilities began with [a unit] elbowing into and usurping decisions concerning online delivery of courses. The result was confusion and "ruffled feathers" bordering on mutiny! At no time has a new policy or procedures statement been issued clarifying the roles and responsibilities of [a unit] and programs related to curriculum development, curriculum maintenance, curriculum content, curriculum assessment. Currently the process is undefined and depends upon a great deal of GOOD will.
Work is underway to revise GPPRC Policy and Procedures, standardize course/program change requests, guide creation of course descriptions for example. The problem in the past has been that policies were approved, but not implemented, records could not be located that supported a policy change. (e.g., disparity between GFC policy and FOE practice regarding approval and implementation of citation programs).
- Prior learning assessments - Procedure for giving staff free or discounted classes - There are probably a lot more …
New program approvals Updates to programs (courses, names, electives, hours, etc) Program admission Registration Office Course Release Procedures - in terms of when the program units should have all the data released. Website updates/procedures for changes Program Brochure structure - all stakeholders should have an opportunity to review the data/schedule Student Graduation procedures Records Management Procedures
New program proposal procedures, course set up procedures (particularly with the registration office) and graduate program administration outside of MACT.
New program development and approval
I think that the GPPRC policy guide needs to be reviewed and reorganized. In my view some of the policies are not distinct from procedures. If there were separated out it would make the review and change processes clear (i.e., if there are changes to policies they can go through the necessary approval steps; procedures can be discussed and changed with input from the appropriate stakeholder groups). A well-organized records management system would be helpful - I am not sure if the Lantern is providing that at the moment.

Some stuff that used to be in the old University procedures binder. Not relevant today and outdated. Stuff that leads to a wild goose chase to various departments.
It would be helpful to have a standard procedure for when a Supervisor is away from the office on business trips or conferences. Who is next in line as a decision maker? Who has signing authority? That kind of thing.
Our graduation procedures are very confusing as Bear Tracks only allows students access after November 1 so we will use graduation forms that are sent to the RO directly sometimes so we never fully know who has applied or not and we cannot run proper reports to see who all eligible graduates are so grads get missed.
Not necessarily for me, but for the next person to do my job.
Can't do so without identifying myself.
Request for invoice How to propose a new credit course Contract project
Anything that has to do with booking facilities on main campus, specialized knowledge like payroll. If a key person is away or stuck, the information to do certain tasks is not easily available for someone to cover for the absent employee.
I think I have enough procedures to follow and sometimes ignore. When it comes down to providing support for instructors, flexibility has to be considered.
- all of them :) - a timeline of what tasks need to be done at what time of the year or term and the order in which they need to be done (for example, an online course for the next term needs to have the instructor confirmed and they must review the content
- Travel claims - Hiring research assistants - Managing grants
1. The entire hiring process specific to the Faculty of Extension. 2. How to contract a vendor and what documentation is necessary. 3. The process of submitting invoices, services requisitions, expense reimbursements, cash advances, etc., here, internally at the Faculty of Extension. 4. The process of applying for travel specific to the Faculty of Extension. I could list many more, however, I cannot do so anonymously.
A simple procedure, for the faculty, on the process of approving changes to or new policy or procedures.

Table AO: Questionnaire Question 11 - Requested Procedures from Participants for Documentation and/or Standardization

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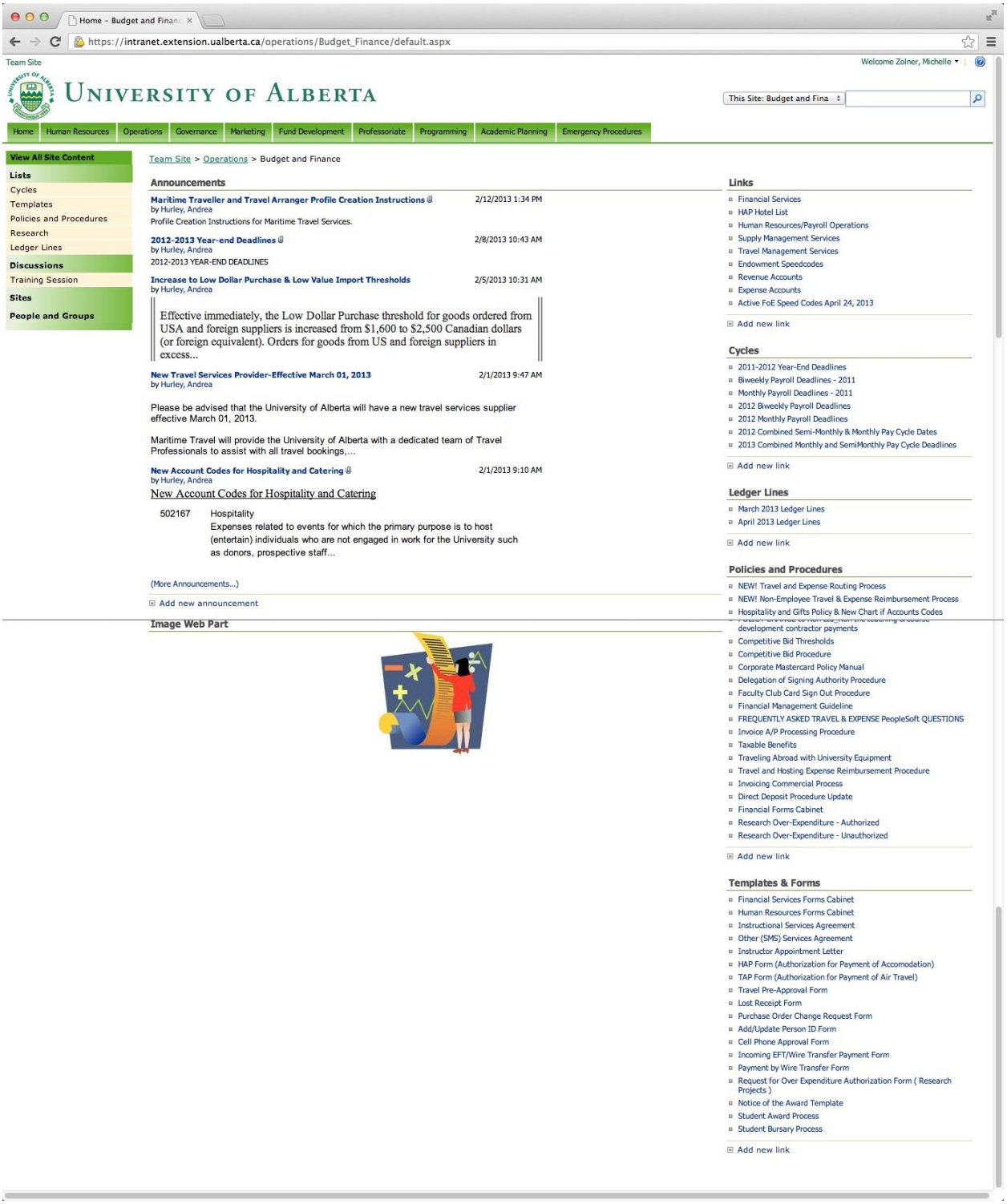
Appendix P: 'The Lantern' Operations > Finance Example



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